V-TAT-000233-2013.00
Initial Title V Permit

EOG Resources, Inc.
600 Seventeenth Street
Suite 1000N
Denver, CO 80202
Main: 303-572-9000
Fax: 303-824-5400

July 3, 2013

Environmental Protection Agency
Eric Wortman
TV Permitting Coordinator
U.S. EPA, Region 8
1595 Wynkoop Avenue, 8P-AR
Denver, Colorado 80202-1129

Re: Air Permit Application, TV on Indian Lands Fort Berthold Indian Reservation, North Dakota.

EOG Resources, Inc. (EOG) is submitting a TV Part 71 operating permit application for the Riverview 4-3031H and 100-3031H facility. The information is provided as redundant due to the Tribal NSR program. EOG believes all relevant information is provided, however if you have any questions or concerns, please call me at your convenience.

Thank You,

Curtis Rice
SR. Environmental Specialist

cc: file
Tex Hall, Chairman Three Affiliated Tribes

EOG RESOURCES, INC.
P.O. BOX 4362
HOUSTON, TEXAS 77210-4362

CHECK No. 1192133887

VENDOR No. 323182

07/01/13

2100045 01 SD T 5826 007 -P00045

US ENVIRONMENTAL PROTECTION
AGENCY
FINES & PENALTIES
PO BOX 979078
ST LOUIS, MO 63197 9000

VOUCHER NO.	INVOICE NO.	INVOICE DATE	DESCRIPTION	NET AMOUNT
354300	JUL0113USEPA	07/01/13	VOUCHERS PAYABLE	14,109.45
			TOTAL CHECK AMOUNT USD	14,109.45

SD2100045-00001_of_0001 5826-0000045 (F30D)

DETACH AND RETAIN THIS STUB FOR YOUR RECORDS.

eogresources

EOG RESOURCES, INC.
P.O. BOX 4362
HOUSTON, TEXAS 77210-4362

VENDOR No. 323182

62-20
311

No. 1192133887

07/01/13

$$$$$$$$$14,109.45

NOT VALID AFTER 90 DAYS

PAY TO THE ORDER OF
US ENVIRONMENTAL PROTECTION
AGENCY
FINES & PENALTIES
PO BOX 979077
ST LOUIS, MO 63197 9000

Fourteen Thousand One Hundred Nine and 45/100 Dollars

AUTHORIZED SIGNATURE

CITIBANK, N.A.
ONE PENN'S WAY, NEW CASTLE, DE 19720

OPERATIONS ACCOUNT

⑈1192133887⑈ ⑆031100209⑆ 3911028 2⑈

AECOM Environment

Prepared for:
EOG Resources, Inc.
Denver, CO

Prepared by:
AECOM
Fort Collins, CO
July 1, 2013

Riverview 4-3031H & 100-3031H Production Pad Part 71 Title V Permit Application

AECOM Environment

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AECOM
Fort Collins, CO
July 1, 2013

Riverview 4-3031H & 100-3031H Production Pad Part 71 Title V Permit Application

James Van Horne

Prepared By James Van Horne

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1.0 Introduction

EOG Resources, Inc. (EOG) is herein applying for an initial Part 71 operating permit for its Riverview 4-3031H & 100-3031H Production Pad located within the exterior bounds of the Fort Berthold Indian Reservation. The site is used to compress and dehydrate natural gas from nearby wells (SIC 1311, NAICS 211111). The facility is located at latitude 37.0173° North and longitude 108.0201° West in McKenzie County, North Dakota. A facility location map is presented as **Figure 1-1**.

The facility is submitting this application to fulfill regulatory requirements. Once the facility is tied into the gas gathering system the flare will no longer be used to control natural gas venting emissions and the facility will fall below Title V emission thresholds.

1.1 General Applicant Information

Listed below are the points of contact for the Riverview 4-3031H & 100-3031H Production Pad permit application. This information also is provided in the general information and summary form provided in **Appendix A**.

Project Site:
EOG – Riverview 4-3031H & 100-3031H Production Pad
S30, T152N, R94W
McKenzie County, North Dakota

Applicant Contacts:
Curtis Rice
Senior Environmental Specialist
600 Seventeenth Street
Suite 1000N
Denver, CO 80202
(303) 262-9946

James Van Horne
Air Quality Engineer
AECOM
1601 Prospect Parkway
Fort Collins, CO 80525
(970) 493-8878

1.2 Visitor Information

1.2.1 Facility Driving Directions

1. From ND-23 in Four Bears Village, North Dakota head west on ND-23
2. Drive 8.4 Miles turn left on BIA Route 27
3. The facility will be on the left side of the road after 1.1 miles

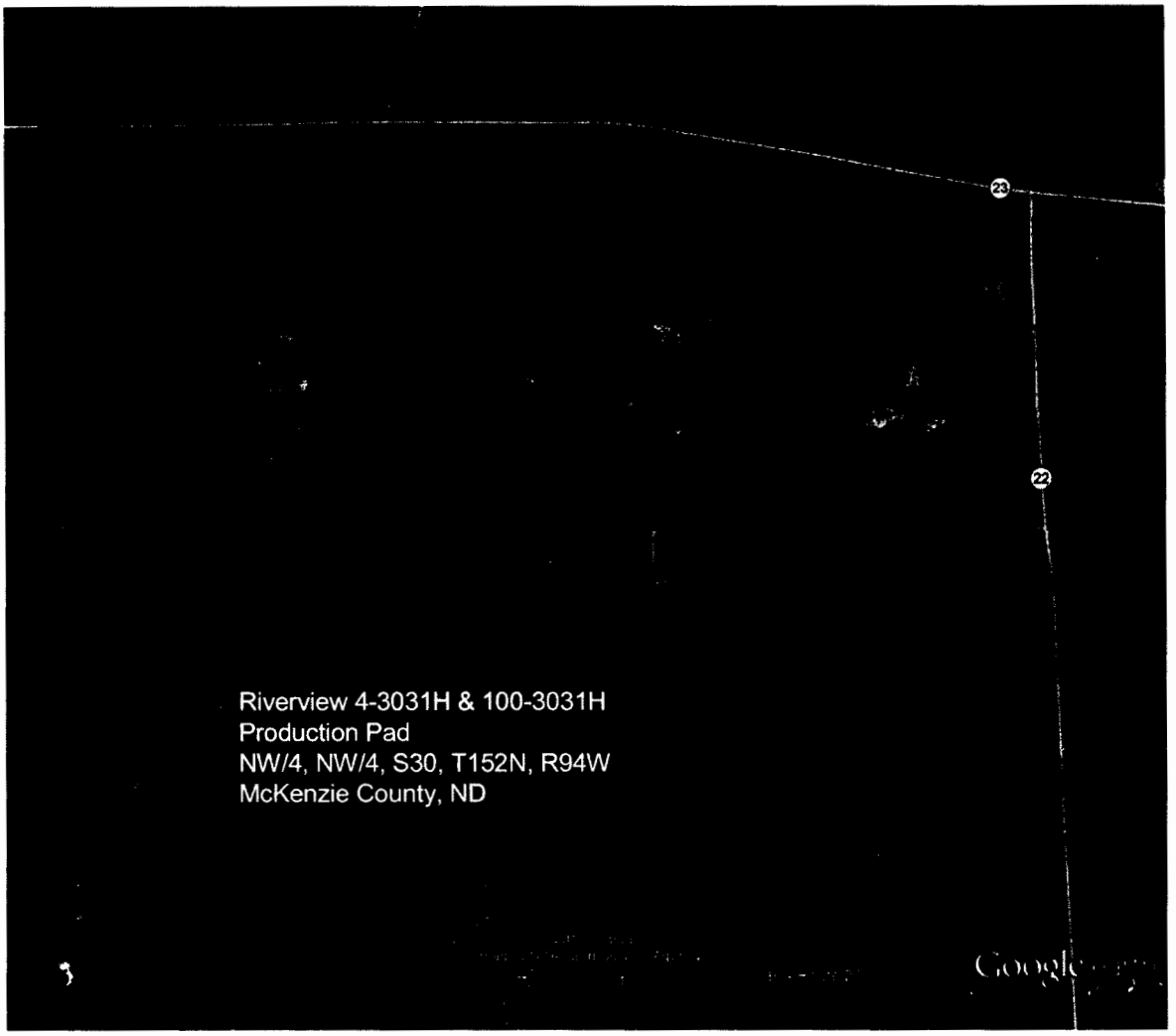

Figure 1-1 Riverview 4-3031H & 100-3031H Production Pad Location Map

2.0 Process Description

2.1 Facility Equipment

Equipment onsite with significant emission rates includes: one (1) John Deere 6068 diesel generator engine, twelve (12) 400 bbl crude oil tanks, two (2) 400 bbl produced water tanks, two (2) natural gas flares, crude oil truck loading, and fugitive emission leaks.

Insignificant emission sources onsite includes: two (2) 750,000 Btu/hr heater treaters.

2.2 Process Description

Oil and gas from the wells flow to a heater treater/separator where water, oil and gas are separated. Oil is directed to a vapor recovery tower where remaining light end hydrocarbons are separated from the oil. The oil is then sent to atmospheric storage tanks and trucked from the facility. The overhead gas from heater treaters and vapor recovery towers are sent to a flare for control until the facility can be tied into the natural gas gathering system in the area. Power for the entire facility is provided by a diesel generator.

3.0 Facility Potential to Emit

This chapter addresses emissions from station operation and is organized by emission unit groups. Each section describes the basis for the emission calculations and any from the specific operation or activity. Each emission unit description also includes a unit identification number for cross referencing with the attached worksheets included in **Appendix B**. The facility potential to emit is summarized in **Table 3-1**, **Table 3-2**, and **Table 3-3** for criteria pollutants, hazardous air pollutants and greenhouse gases, respectively. Detailed emission data and calculations for each emission unit or group are presented in the following sections:

- Condensate Tanks;
- Produced Water Tanks;
- Temporary Gas Flare;
- Fugitive Equipment Leaks;
- Oil Truck Loading; and
- Diesel fired generator engine.

3.1 Condensate Tanks (TK-1 through TK-12)

Twelve oil tanks are used to store oil produced from the wells onsite. Methane, CO_2, VOC and HAP emissions from the unit were calculated using the E&P Tanks 2.0. Inputs to the model are based on the average composition of two representative pressurized oil samples and three representative tank oil samples obtained from nearby wells and the expected operating conditions. The tanks are controlled by a two flares with a destruction efficiency of 98 percent. The E&P Tanks input and output can be found in **Appendix B-1**. Detailed emission calculations are provided in **Appendix B** and the pressurized oil and tank oil analyses are located in **Appendix D**. Actual oil production data can be found in **Appendix E**. Combustion emissions were calculated using the emission factors in USEPA AP 42 Table 13.5-1. Greenhouse gas combustion emissions for CO_2 and methane were calculated based on the emission factors for natural gas combustion in 40 CFR 98 Table C-1 and C-2. CO_2 equivalent emissions were calculated based on the global warming potential conversation factors in 40 CFR 98 Table A-1.

3.2 Produced Water Tanks (TK-13 and TK-14)

Two produced water tanks are used to store water produced from the wells onsite. Emissions were estimated using the worst case emission factors from the Colorado Department of Public Health and Environment PS Memo 09-02 (2/8/2010) and the total water throughput.

3.3 Temporary Flare (F-1 and F-2)

Two flares are used to control the condensate tanks and produced natural gas until the facility can be tied into a natural gas gathering system. VOC and HAP emissions were calculated using the actual well gas production and two extended gas analyses from each well. Combustion emissions were calculated using the emission factors in USEPA AP 42 Table 13.5-1. Greenhouse gas combustion emissions for CO_2 and methane were calculated based on the emission factors for natural gas combustion in 40 CFR 98 Table C-1 and C-2. All combustion emission associated with the control of the condensate tanks were included with the tanks to avoid double counting. Detailed emission calculations are provided in **Appendix B** and the gas analyses are located in **Appendix D**. CO_2 equivalent emissions were calculated based on the global warming potential conversation factors in 40 CFR 98 Table A-1.

3.4 Fugitive Component Leaks (FUG)

Fugitive Component Leak Emissions were calculated based on the emission factors in Table 2-4 of Protocol for Equipment Leak Emission Estimates (EPA 453/R-95-017). Components in each service were estimated using a representative count per piece of equipment. Representative stream compositions were taken from the extended analyses used for the condensate tank and flare emission estimates. Detailed emission calculations are provided in **Appendix B** and the gas and oil analyses are located in **Appendix D**.

3.5 Oil Truck Loading (TLO)

Oil Truck loading emissions were calculated based on equation 1 of AP 42 Chapter 5.2. Representative parameters were taken from the condensate sample, E&P tanks run and meteorological data for Williston, ND. Detailed emission calculations are provided in **Appendix B** and the oil analyses are located in **Appendix D**.

3.6 Natural Gas Fired Compression Engines (E-1)

One diesel fired engine is used to provide power to the facility. The unit is a certified Tier 3 engine. E-1 emissions of NO_X, CO, and PM are based on the standards for Tier 3 engines. VOC, SO_2 and organic HAP emissions are calculated using emission factors from USEPA AP-42 Table 3.3-1 and 3.3-2. CO_2, Methane, and N_2O emissions are based on the emission factors for natural gas combustion in 40 CFR 98 Table C-1 and C-2. CO_2 equivalent emissions were calculated based on the global warming potential conversation factors in 40 CFR 98 Table A-1. Detailed emission calculations are provided in **Appendix B**. Engine specifications can be found in **Appendix C**.

Table 3-1 Facility Potential to Emit for Criteria Pollutants

Emission Unit	Equipment Description	Site Rating	Criteria Pollutant Emissions (TPY)					
			NO_X	CO	VOC	SO_2	PM_{10}	$PM_{2.5}$
TK-1 to TK-12	Condensate Tanks	400 bbl	0.4	2.2	2.8	--	0.1	0.1
TK-13 & TK-14	Produced Water Tanks	400 bbl	--	--	0.7	--	--	--
F-1 & F-2	Temporary Gas Flare	87,805 scf/hr	38.9	211.5	181.4	0.3	10.2	10.2
FUG	Fugitive Equipment Leaks	N/A	--	--	11.4	--	--	--
TLO	Truck Loading	445,300 bbl/yr	--	--	43.8	--	--	--
E-1	Diesel Generator	220 hp	6.4	5.5	2.8	--	0.3	0.3
Insignificant Emission Sources			0.4	0.4	--	--	--	--
Facility Total			46.1	219.6	241.9	0.3	10.6	10.6

Table 3-2 Facility Potential to Emit for Hazardous Air Pollutants

Emission Unit	Equipment Description	Site Rating	HAP Emissions (TPY)						
			n-Hexane	Benzene	Toluene	E-Benzene	Xylenes	CH_2O	Total HAP
TK-1 to TK-12	Condensate Tanks	400 bbl	0.03	--	--	--	--	--	0.05
TK-13 & TK-14	Produced Water Tanks	400 bbl	0.06	0.02	--	--	--	--	0.08
F-1 & F-2	Temporary Gas Flare	87,805 scf/hr	4.85	1.50	1.07	0.02	0.19	--	7.62
FUG	Fugitive Equipment Leaks	N/A	0.46	0.07	0.21	0.16	0.28	--	1.19
TLO	Truck Loading	445,300 bbl/yr	2.64	0.26	1.47	1.30	2.22	--	11.75
E-1	Diesel Generator	220 hp	--	0.01	--	--	--	0.01	0.03
Insignificant Emission Sources			0.01	--	--	--	--	--	0.01
Facility Total			8.05	1.87	2.76	1.48	2.70	0.01	20.73

Table 3-3 Facility Potential to Emit for Greenhouse Gases

Emission Unit	Equipment Description	Site Rating	GHG Emissions (TPY)				
			CO_2	Methane	N_2O	Total Mass	CO_2e
TK-1 to TK-12	Condensate Tanks	400 bbl	746.23	0.80	--	747.03	763.38
TK-13 & TK-14	Produced Water Tanks	400 bbl	--	--	--	--	--
F-1 & F-2	Temporary Gas Flare	87,805 scf/hr	71,249.95	197.76	0.13	71,447.84	75,442.08
FUG	Fugitive Equipment Leaks	N/A	--	5.52	--	5.52	115.94
TLO	Truck Loading	445,300 bbl/yr	--	--	--	--	--
E-1	Diesel Generator	220 hp	1,099.83	0.04	0.01	1,099.88	1,103.53
Insignificant Emission Sources			530.39	0.01	0.01	530.41	533.62
Facility Total			73,626.40	204.14	0.15	73,830.68	77,958.55

4.0 Applicable Requirements

This chapter presents a review of the air quality regulations and standards that govern operations at the Riverview 4-3031H & 100-3031H Production Pad. Only federal air regulations were reviewed for applicability as well as requirements pursuant to existing permits and consent agreements. Specifically the following regulations, standards, and provisions were reviewed:

- Prevention of Significant Deterioration (PSD);
- Minor Source New Source Review (NSR);
- Federal Implementation Plan (FIP)
- New Source Performance Standards (NSPS);
- National Emission Standards for Hazardous Air Pollutants (NESHAP);
- Compliance Assurance Monitoring (CAM) Regulations;
- Risk Management Program (RMP) Standards;

The federal regulatory programs, as promulgated by the USEPA, and administered by Region 8 have been developed under the authority of the 1970 CAA (or Act) and subsequent amendments.

4.1 Facility Permitting History

The site has never had a permit. It began operations in June of 2012.

4.2 PSD

There are three basic criteria used to determine PSD applicability. The first and primary criterion is whether the proposed project is sufficiently large in terms of emissions to be considered a "major" stationary source or a "major" modification to an existing "major" stationary source. Source size is defined in terms of "potential to emit", which is its capability at maximum design capacity to emit a pollutant, except as constrained by federally enforceable permit conditions. 40 CFR 63 Subpart HH allows for sources in declining fields to calculate emissions base on highest annual natural gas throughput over the 5 years prior to October 15, 2012, multiplied by 1.2. This is equivalent to 14.4 MMscf per day for the dehydrator. The PSD rules contained in 40 CFR 52.21(b)(1) state that a facility is classified as a "major stationary source" if the facility emits or has the potential to emit:

i. 100 or more of a regulated air contaminant in an area designated attainment for that air contaminant and the facility is a source classified as a Categorical Source; and

ii. 250 or more of a regulated air contaminant in an area designated attainment for that air contaminant.

Oil and gas production facilities are not classified as a Categorical Source; therefore, the major source emission rate threshold for this source type is 250. The Riverview 4-3031H & 100-3031H Production Pad is an existing minor stationary source with respect to PSD because it has the potential to emit less than 250 of all regulated pollutants. As shown in **Table 3-6**, potential emissions are below 250 for all regulated pollutants; therefore, PSD permitting does not apply.

4.3 NSR

The tribal minor source program applies to new and existing minor sources located on tribal land. It requires that sources which began construction prior to August 30, 2011 register with EPA by March 1, 2013. Sources that began construction after August 30, 2011 but before September 2, 2014 are required to register with EPA within 90 days of commencing operation. Sources that plan to begin

construction after September 2, 2014 are required to obtain a permit prior to commencing construction. The Riverview 4-3031H & 100-3031H Production Pad began construction on after August 30, 2011 and began operations on June 2012. The initial registration was submitted to the EPA within 90 days of commencing operations.

4.4 FIP

The FIP for oil and natural gas well production facilities on the Fort Berthold Indian Reservation applies to new and existing oil and gas production facilities located within the exterior bounds of the Fort Berthold Indian Reservation. It requires that sources control emissions from oil tanks and produced water tanks and natural gas venting. The rule is also a means of establishing federally enforceable controls on those sources. The Riverview 4-3031H & 100-3031H Production Pad is subject to and in compliance with all the requirements of this regulation.

4.5 40 CFR 60 - NSPS

The regulation of new sources, through the development of standards applicable to a specific category of sources, was a significant change under the CAA (P.L. 91-604). The Administrator was directed to prepare and publish a list of stationary source categories that, in the Administrator's judgment, cause, or contribute significantly to air pollution and that may reasonably be anticipated to endanger public health. Further, the Administrator was to publish a proposed regulation establishing a Standard of Performance for any new source that fell into any such identified category. The significant feature of the law is that it applies to all new, modified, or reconstructed sources within a given category, regardless of geographic location or the existing ambient air quality. The standards define emission limitations that would be applicable to a particular source group. The NSPS potentially applicable to the Riverview 4-3031H & 100-3031H Production Pad include:

- Subpart A – General Provisions
- Subpart K, Ka, Kb – Standards of Performance for Storage Vessels for Petroleum Liquids
- Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines; and
- Subpart OOOO - Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution.

4.5.1 Subpart A – General Provisions

Certain provisions of 40 CFR Part 60 Subpart A applies to the owner or operator of any stationary source subject to a NSPS. These requirements a detailed in the sections below.

4.5.2 Subpart K, Ka, Kb – Standards of Performance for Storage Vessels for Petroleum Liquids

Subparts K, Ka, and Kb apply to storage vessels of petroleum liquids that were constructed after June 11, 1973 but before May 19, 1978 (Subpart K), After May 18, 1978 and before July 23, 1984 (Subpart Ka) and after July 23, 1984 (Subpart Kb). All the tanks onsite were built after July 23, 1984. They are all exempt from this regulation under §60.110b(a) because they each have a storage capacity of less than 75 cubic meters.

4.5.3 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Subpart III applies to manufacturers, owners and operators of stationary Compression ignition (CI) internal combustion engines (ICE). Affected engines are the following; engines that commence construction (ordered from the manufacturer) after July 11, 2005 and are manufactured after April 1, 2006 (non-fire pump engines) and engines that are modified or reconstructed after July 11, 2005.

Unit E-1 was manufactured after July 11, 2005 (2008) and is subject to the emission control requirements of this subpart. The engine is a certified USEPA Tier 3 engine and is being operated as a certified engine.

4.5.4 Subpart OOOO – Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution

Subpart OOOO applies to owners and operators gas wells, centrifugal compressors, reciprocating compressors, pneumatic controllers, natural gas processing plants, storage vessels, and natural gas sweetening units that commence construction modification or reconstruction after August 23, 2011. The facility does not operate natural gas wells, centrifugal compressors, natural gas processing plants, or sweetening units.

The storage tanks were constructed after August 23, 2011 and are therefore subject the control, recordkeeping and monitoring requirements of this regulation. The source has until October of 2013 to comply with this regulation. The all pneumatic controllers onsite are no bleed and are therefore exempt from this regulation.

The facility does not operate any natural gas compressors.

4.6 40 CFR 63 – National Emission Standards for Hazardous Air Pollutants (NESHAP)

NESHAP for Source Categories known as Maximum Available Control Technology (MACT) standards affect certain designated industrial sources referred to as "source categories" that may emit or have the potential to emit one or more of 188 designated HAP. MACT standards (subparts) are codified at 40 CFR Part 63. The following MACT rules are relevant to the Riverview 4-3031H & 100-3031H Production Pad:

- Subpart HH—National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities;
- Subpart EEEE—National Emission Standards for Hazardous Air Pollutants for Organic Liquids Distribution (Non-Gasoline); and
- Subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines.

MACT standards regulate affected sources located at a “major source” and “Area Source”, defined in Subpart A (§63.2) as:

> *any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants . . .*

An area source is any source that is not a major source.

Currently, the Riverview 4-3031H & 100-3031H Production Pad station is an Area Source of HAP emissions.

4.6.1 Subpart A – General Provisions

The General Provisions set out in Subpart A to any source that is regulated by any MACT standard. Individual standards under Part 63 have requirements that differ from Subpart A, whereby the requirements within the relevant rule should be followed. USEPA provides a tabular summary at the end of each MACT that specifies those General Provisions that apply and those which do not for a

particular rule. As described below the facility is not subject to any requirements under the MACT standard.

4.6.2 Subpart HH – Oil and Natural Gas Production Facilities

Subpart HH applies upstream petroleum production operations including well sites/pads, tank batteries, gas plants and compressor stations and other facilities that operate one or more "affected sources". For major sources, the affected source for purposes of Subpart HH is comprised of each of the following emission points located at a "facility", as defined in the rule:

- Each glycol dehydration unit, as defined in §63.761;
- Each storage vessel with the potential for flash emissions, as defined in §63.761;
- The group of all ancillary equipment, except compressors, intended to operate in volatile hazardous air pollutant (VHAP) service (as defined in §63.761), which are located at natural gas processing plants; and
- Compressors intended to operate in volatile hazardous air pollutant service (as defined in §63.761), which are located at natural gas processing plants.

The Riverview 4-3031H & 100-3031H Production Pad station is an Area Source of HAP emissions and does not have any applicable requirement under this subpart.

4.6.3 Subpart EEEE - Organic Liquids Distribution

Subpart EEEE applies to organic liquid distribution processes at major sources. The Riverview 4-3031H & 100-3031H Production Pad is an area source of HAP emissions and has organic liquid distribution processes (condensate truck loading). The Riverview 4-3031H & 100-3031H Production Pad therefore has no applicable requirements under this subpart.

4.6.4 Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines

The Reciprocating Internal Combustion Engines (RICE)-MACT (40 CFR 63, Subpart ZZZZ) affects certain stationary RICE at a major or area source of HAP emissions. The RICE onsite is considered a new compression ignition engine because it was constructed prior after June 6, 2006. The only requirement under the Subpart is for the unit to comply with 40 CFR 60 Subpart IIII.

4.7 Compliance Assurance Monitoring (CAM) Regulations

The Compliance Assurance Monitoring (CAM) Rule, 40 CFR Part 64, addresses monitoring requirements for certain emission units at major sources, thereby assuring that facility owners and operators conduct effective monitoring of their air pollution control equipment. An emission unit is subject to CAM if all of the following criteria are satisfied:

- The unit is subject to an emissions limitation or standard for the pollutant of concern;
- An "active" control device is used to achieve compliance with the emission limit; and
- The emission unit's pre-control potential to emit (PTE) is greater than the applicable major source threshold.

The CAM rule does not apply to facilities that are subject to Sections 111 (NSPS) or 112 (NESHAP) of the CAA or those sources subject to the Acid Rain Program and emissions trading programs. The oil tanks and flare at the Riverview 4-3031H & 100-3031H Production Pad have pre-control emissions greater than major source thresholds. The unit plan to use the monitoring requirements in the Federal Implementation Program for oil and gas production facilities located in 40 CFR 49 Subpart K.

4.8 Risk Management Plan (RMP) Regulations

Title III of the 1990 CAA Amendments contains requirements for subject facilities that store and/or process certain hazardous substances to ensure their safe use. Under these requirements, facilities must identify and assess their hazards and carry out certain activities designed to reduce the likelihood and severity of accidental chemical releases. Section 112(r) of the CAA mandated the USEPA to publish rules for development and implementation of RMPs for sources with more than the threshold quantity of a listed regulated substance. The plans are designed to identify, prevent, and minimize the consequences of accidental releases. See 40 CFR 68. The three elements that should be incorporated into the risk management plan include:

- Hazard Assessment;
- Prevention Program; and
- Emergency Response Program.

Because the Riverview 4-3031H & 100-3031H Production Pad stores regulated substances prior to custody transfer it is exempt from the RMP regulation.

Appendix A

Application Forms

United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 06/30/2015

Federal Operating Permit Program (40 CFR Part 71)

GENERAL INFORMATION AND SUMMARY (GIS)

A. Mailing Address and Contact Information

Facility name _**EOG Resources, Riverview 4 and 100-331H Production Pad**

Mailing address: Street or P.O. **Box _600 17th Street**

City __**Denver** State **CO** ZIP **80202**

Contact person: _**Curtis Rice** Title _**SR. Environmental Specialist**

Telephone (__303____) __262_____ - ___9946_____ Ext. _____

Facsimile (_____) _____ - _____

B. Facility Location

Temporary source? ___Yes _x__No Plant site location **Fort Berthold North Dakota**

City _____ State **ND** County_____ EPA Region **8**

Is the facility located within:

Indian lands? __x_YES ___ NO OCS waters? ___YES _x__ NO

Non-attainment area? ___ YES _x__NO If yes, for what air pollutants? _____

Within 50 miles of affected State? _ YES _x_ NO If yes, What State(s)? ____

C. Owner

Name __**EOG Resources, Inc.** Street/P.O. Box _**600 17th St.**

City _**Denver** State **CO** ZIP **80202**

Telephone **303- 262 9946**

D. Operator

Name **SAME** Street/P.O. Box _____

City _____ State _____ ZIP _____ - _____

Telephone (_____) _____ - _____ Ext_____

E. Application Type

Mark only one permit application type and answer the supplementary question appropriate for the type marked.

_x__Initial Permit ___ Renewal ___ Significant Mod ___ Minor Permit Mod(MPM)

___ Group Processing, MPM ___ Administrative Amendment

For initial permits, when did operations commence? __5___ /__1___ /__2012___

For permit renewal, what is the expiration date of current permit? _____/____/_____

F. Applicable Requirement Summary

Mark all types of applicable requirements that apply.

___ SIP _x__ FIP/TIP ___ PSD ___Non-attainment NSR

_x__ Minor source NSR ___ Section 111 ___ Phase I acid rain ___Phase II acid rain

___ Stratospheric ozone ___ OCS regulations ___ NESHAP ___ Sec. 112(d) MACT

___ Sec. 112(g) MACT ___ Early reduction of HAP ___ Sec 112(j) MACT ___ RMP [Sec.112(r)]

___ Tank Vessel requirements, sec. 183(f)) ___ Section 129 Standards/Requirement

___ Consumer / comm.. products, ' 183(e) ___ NAAQS, increments or visibility (temp. sources)

Has a risk management plan been registered? ___YES _x__NO Regulatory agency _____

Phase II acid rain application submitted? ___YES _x__NO If yes, Permitting authority _____

G. Source-Wide PTE Restrictions and Generic Applicable Requirements

Cite and describe any emissions-limiting requirements and/or facility-wide "generic" applicable requirements.

N/A

H. Process Description

List processes, products, and SIC codes for the facility.

Process	Products	SIC
Oil/ Gas Extraction	Oil/Gas	1311

I. Emission Unit Identification

Assign an emissions unit ID and describe each emissions unit at the facility. Control equipment and/or alternative operating scenarios associated with emissions units should by listed on a separate line. Applicants may exclude from this list any insignificant emissions units or activities.

Emissions Unit ID	Description of Unit
TK 1 to TK-12	Product Storage – controlled with a combustor 98% DRE
F-1 and F-2	Casing head gas flare, 98% DRE
Fugitive	Component leaks
TLO	Transfer of oil from storage tanks to trucks for haul off site
E-1	Powering a generator

J. Facility Emissions Summary

Enter potential to emit (PTE) for the facility as a whole for each air pollutant listed below. Enter the name of the single HAP emitted in the greatest amount and its PTE. For all pollutants stipulations to major source status may be indicated by entering "major" in the space for PTE. Indicate the total actual emissions for fee purposes for the facility in the space provided. Applications for permit modifications need not include actual emissions information.

NOx 46.1 tons/yr VOC 242.3 tons/yr SO2 2.2 tons/yr

PM-10 10.6 tons/yr CO 219.6 tons/yr Lead N/A tons/yr

Total HAP 20.65 tons/yr

Single HAP emitted in the greatest amount n-Hexane PTE 7.99 tons/yr

Total of regulated pollutants (for fee calculation), Sec. F, line 5 of form FEE **520.7** tons/yr

K. Existing Federally-Enforceable Permits - -N/A

Permit number(s) _____ Permit type _____ Permitting authority _____

Permit number(s) _____ Permit type _____ Permitting authority _____

L. Emission Unit(s) Covered by General Permits N/A

Emission unit(s) subject to general permit _____

Check one: ___ Application made ___ Coverage granted

General permit identifier _____ Expiration Date ____/____/____

M. Cross-referenced Information

Does this application cross-reference information? ___ YES _x__ NO (If yes, see instructions)

INSTRUCTIONS FOLLOW

United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 06/30/2015

Federal Operating Permit Program (40 CFR Part 71)

EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)

A. General Information

Emissions unit ID TK-1 to TK-12 Description 12 Oil storage Tanks

SIC Code (4-digit) 1311 SCC Code 31000132

B. Emissions Unit Description

Equipment type Organic Liquid Storage Tank Temporary source: ___Yes _X__No

Manufacturer Various Model No. _Custom

Serial No. N/A Installation date 2012

Articles being coated or degreased

Application method

Overspray (surface coating) (%) _____ Drying method

No. of dryers _____ Tank capacity (degreasers) (gal) _____

C. Associated Air Pollution Control Equipment

Emissions unit ID FL-1 & FL-2 Device Type Flare

Manufacturer Zeeco Model No Custom

Serial No. 22093-100 and 22374-003 Installation date June 2012

Control efficiency (%) 98 Capture efficiency (%) 100

Air pollutant(s) controlled VOC Efficiency estimation method manufacturer

D. Ambient Impact Assessment

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) _____._____ Inside stack diameter (ft) _____._____

Stack temp (F) _____._____ Design stack flow rate (ACFM) _____._____

Actual stack flow rate (ACFM) _____ Velocity (ft/sec) _____._____

E. VOC-containing Substance Data

List each VOC-containing substance consumed, processed or produced at the emissions unit that is emitted into the air. In the name column, if providing a brand name, include the name of the manufacture; if the substance contains HAP, list the constituent HAP.

Substance Name (Chemical, Brand Name)	CAS No.	Substance Type	Actual Usage (gal/yr)	Max Usage (gal/day)	Max Usage (gal/year)	VOC Content (lb/gal)
Crude Oil		Organic liquid	18,702,600	51,240	18,702,600	6.617

United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)

EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)

A. General Information

Emissions unit ID TK-13 & TK-14 Description 2 Produced Water Storage Tanks

SIC Code (4-digit) 1311 SCC Code 31000132

B. Emissions Unit Description

Equipment type Organic Liquid Storage Tank Temporary source: ___Yes _X_No

Manufacturer Various Model No. Custom

Serial No. N/A Installation date June 2012

Articles being coated or degreased

Application method

Overspray (surface coating) (%) Drying method

No. of dryers Tank capacity (degreasers) (gal)

C. Associated Air Pollution Control Equipment

Emissions unit ID FL-1 & FL-2 Device Type Flare

Manufacturer Zeeco Model No Custom

Serial No. 22093-100 and 22374-003 Installation date June 2012

Control efficiency (%) 98 Capture efficiency (%) 100

Air pollutant(s) controlled VOC Efficiency estimation method manufacturer

D. Ambient Impact Assessment

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) _____._____ Inside stack diameter (ft) _____._____

Stack temp (F) _____._____ Design stack flow rate (ACFM) _____._____

Actual stack flow rate (ACFM) _____ Velocity (ft/sec) _____._____

E. VOC-containing Substance Data

List each VOC-containing substance consumed, processed or produced at the emissions unit that is emitted into the air. In the name column, if providing a brand name, include the name of the manufacture; if the substance contains HAP, list the constituent HAP.

Substance Name (Chemical, Brand Name)	CAS No.	Substance Type	Actual Usage (gal/yr)	Max Usage (gal/day)	Max Usage (gal/year)	VOC Content (lb/gal)
Produced Water		Organic liquid	4,445,700	12,180	4,445,700	< 1%

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Federal Operating Permit Program (40 CFR Part 71)

EMISSION UNIT DESCRIPTION FOR FUEL COMBUSTION SOURCES (EUD-1)

A. General Information

Emissions unit ID FL-1 and FL-2 Description Natural Gas Flare

SIC Code (4-digit) 1311 SCC Code 31000215

B. Emissions Unit Description

Primary use _Natual Gas Flaring Temporary Source _X__Yes ___No

Manufacturer Zeeco Model No. Custom

Serial Number _____ Installation Date____/____/_____

Boiler Type: ___ Industrial boiler ___ Process burner ___ Electric utility boiler

Other (describe) Candlestick Flare

Boiler horsepower rating_____ Boiler steam flow (lb/hr)_____

Type of Fuel-Burning Equipment (coal burning only):

___ Hand fired ___Spreader stoker ___Underfeed stoker ___Overfeed stoker

___ Traveling grate ___Shaking grate ___Pulverized, wet bed ___ Pulverized, dry bed

Actual Heat Input 130.52 MM BTU/hr Max. Design Heat Input 238.82 MM BTU/hr

C. Fuel Data

Primary fuel type(s) Casing Gas Standby fuel type(s)

Describe each fuel you expected to use during the term of the permit.

Fuel Type	Max. Sulfur Content (%)	Max. Ash Content (%)	BTU Value (cf, gal., or lb.)
Casing Gas	4.0		

D. Fuel Usage Rates

Fuel Type	Annual Actual Usage	Maximum Usage	
		Hourly	Annual
Casing Gas	769.2 MMscf/yr	160,666.7 scf/hr	769.2 MMscf/yr

E. Associated Air Pollution Control Equipment

Emissions unit ID FL-1 & FL-2 Device type Flare

Air pollutant(s) Controlled VOC Manufacturer Zeeco

Model No. Custom Serial No. 22093-001 & 22374-003

Installation date 2012 Control efficiency (%) 98

Efficiency estimation method Manufacturer

F. Ambient Impact Assessment

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) _____._____ Inside stack diameter (ft) _____._____

Stack temp(°F) _____._____ Design stack flow rate (ACFM) _____._____

Actual stack flow rate (ACFM) _____._____ Velocity (ft/sec) _____._____

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EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)

A. General Information

Emissions unit ID TLO Description Truck Loading of Crude Oil

SIC Code (4-digit) 1311 SCC Code 31000199

B. Emissions Unit Description

Equipment type Truck Loading Temporary source: ___Yes _X_No

Manufacturer N/A Model No. N/A

Serial No. N/A Installation date June 2012

Articles being coated or degreased _____

Application method _____

Overspray (surface coating) (%) _____ Drying method _____

No. of dryers _____ Tank capacity (degreasers) (gal) _____

C. Associated Air Pollution Control Equipment

Emissions unit ID None Device Type _____

Manufacturer _____ Model No_ _____

Serial No. _____ Installation date ___/__/_____

Control efficiency (%) _____ Capture efficiency (%) _____

Air pollutant(s) controlled _____ Efficiency estimation method _____

D. Ambient Impact Assessment

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) _____._____ Inside stack diameter (ft) _____._____

Stack temp (F) _____._____ Design stack flow rate (ACFM) _____._____

Actual stack flow rate (ACFM) _____ Velocity (ft/sec) _____._____

E. VOC-containing Substance Data

List each VOC-containing substance consumed, processed or produced at the emissions unit that is emitted into the air. In the name column, if providing a brand name, include the name of the manufacture; if the substance contains HAP, list the constituent HAP.

Substance Name (Chemical, Brand Name)	CAS No.	Substance Type	Actual Usage (gal/yr)	Max Usage (gal/day)	Max Usage (gal/year)	VOC Content (lb/gal)
Crude Oil		Organic liquid	18,702,600	1	18,702,600	6.617

EPA United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)

EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)

A. General Information

Emissions unit ID FUG Description Fugitive Equipment Leaks

SIC Code (4-digit) 1311 SCC Code 310888811

B. Emissions Unit Description

Equipment type Fugitive Equipment Leaks Temporary source: ___Yes _X_No

Manufacturer N/A Model No. N/A

Serial No. N/A Installation date 2012

Articles being coated or degreased _____

Application method _____

Overspray (surface coating) (%) _____ Drying method _____

No. of dryers _____ Tank capacity (degreasers) (gal) _____

C. Associated Air Pollution Control Equipment

Emissions unit ID None Device Type _____

Manufacturer _____ Model No _____

Serial No. _____ Installation date ___/__/_____

Control efficiency (%) _____ Capture efficiency (%) _____

Air pollutant(s) controlled _____ Efficiency estimation method _____

D. Ambient Impact Assessment

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) _____._____ Inside stack diameter (ft) _____._____

Stack temp (F) _____._____ Design stack flow rate (ACFM) _____._____

Actual stack flow rate (ACFM) _____ Velocity (ft/sec) _____._____

E. VOC-containing Substance Data

List each VOC-containing substance consumed, processed or produced at the emissions unit that is emitted into the air. In the name column, if providing a brand name, include the name of the manufacture; if the substance contains HAP, list the constituent HAP.

Substance Name (Chemical, Brand Name)	CAS No.	Substance Type	Actual Usage (gal/yr)	Max Usage (gal/day)	Max Usage (gal/year)	VOC Content (lb/gal)
N/A						

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Federal Operating Permit Program (40 CFR Part 71)

EMISSION UNIT DESCRIPTION FOR FUEL COMBUSTION SOURCES (EUD-1)

A. General Information

Emissions unit ID E-1 Description Diesel Fired Generator Engine

SIC Code (4-digit) 1311 SCC Code 20100107

B. Emissions Unit Description

Primary use Power Generation Temporary Source ___Yes _X_No

Manufacturer John Deere Model No. 6068HF485T

Serial Number PE6068L036186 Installation Date June 2012

Boiler Type: ___ Industrial boiler ___ Process burner ___ Electric utility boiler

Other (describe) Diesel Fired Generator Engine

Engine horsepower rating 220 hp Boiler steam flow (lb/hr)_____

Type of Fuel-Burning Equipment (coal burning only):

___ Hand fired ___Spreader stoker ___Underfeed stoker ___Overfeed stoker

___ Traveling grate ___Shaking grate ___Pulverized, wet bed ___ Pulverized, dry bed

Actual Heat Input 1.54 MM BTU/hr Max. Design Heat Input 1.54 MM BTU/hr

C. Fuel Data

Primary fuel type(s) USL Diesel Fuel Standby fuel type(s)

Describe each fuel you expected to use during the term of the permit.

Fuel Type	Max. Sulfur Content (%)	Max. Ash Content (%)	BTU Value (cf, gal., or lb.)
Diesel Fuel	0.0015	Negligable	138,000 Btu/gal

D. Fuel Usage Rates

Fuel Type	Annual Actual Usage	Maximum Usage	
		Hourly	Annual
Diesel Fuel	97.8 Mgal/yr	11.2 gal/hr	97.8 Mgal/yr

E. Associated Air Pollution Control Equipment

Emissions unit ID E-1 Device type USEPA Tier 3 Certified

Air pollutant(s) Controlled NOx, CO, PM, VOC Manufacturer John Deere

Model No. N/A Serial No.

Installation date June 2012 Control efficiency (%) N/A

Efficiency estimation method USEPA Tier 3 Standards

F. Ambient Impact Assessment

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) _____._____ Inside stack diameter (ft) _____._____

Stack temp(°F) _____._____ Design stack flow rate (ACFM) _____._____

Actual stack flow rate (ACFM) _____._____ Velocity (ft/sec) _____._____

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Federal Operating Permit Program (40 CFR Part 71)

INSIGNIFICANT EMISSIONS (IE)

On this page list each insignificant activity or emission unit. In the "number" column, indicate the number of units in this category. Descriptions should be brief but unique. Indicate which emissions criterion of part 71 is the basis for the exemption.

Number	Description of Activities or Emissions Units	RAP, except HAP	HAP
2	0.75 MMBtu/hr heater treaters	X	X

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Federal Operating Permit Program (40 CFR Part 71)

INITIAL COMPLIANCE PLAN AND COMPLIANCE CERTIFICATION (I-COMP)

SECTION A - COMPLIANCE STATUS AND COMPLIANCE PLAN

Complete this section for each unique combination of applicable requirements and emissions units at the facility. List all compliance methods (monitoring, recordkeeping and reporting) you used to determine compliance with the applicable requirement described above. Indicate your compliance status at this time for this requirement and compliance methods and check "YES" or "NO" to the follow-up question.

Emission Unit ID(s): **All at Riverview 4 & 100-3031H**

Applicable Requirement (Describe and Cite)

TRIBAL NSR, IIII, ZZZZ, PART 71, OOOO

Compliance Methods for the Above (Description and Citation):

MONITORING AND RECORDKEEPING

Compliance Status:

_X_ In Compliance: Will you continue to comply up to permit issuance? _X_ Yes ____ No

___ Not In Compliance: Will you be in compliance at permit issuance? ___ Yes ___ No

___ Future-Effective Requirement: Do you expect to meet this on a timely basis? ____ Yes ____ No

Emission Unit ID(s):

Applicable Requirement (Description and Citation):

Compliance Methods for the Above (Description and Citation):

Compliance Status:

___ In Compliance: Will you continue to comply up to permit issuance? ____ Yes ____ No

___ Not In Compliance: Will you be in compliance at permit issuance? ___ Yes ___ No

___ Future-Effective Requirement: Do you expect to meet this on a timely basis? ____ Yes ____ No

B. SCHEDULE OF COMPLIANCE

Complete this section if you answered "NO" to any of the questions in section A. Also complete this section if required to submit a schedule of compliance by an applicable requirement. Please attach copies of any judicial consent decrees or administrative orders for this requirement.

Unit(s)_____ Requirement_____

Reason for Noncompliance. Briefly explain reason for noncompliance at time of permit issuance or that future-effective requirement will not be met on a timely basis:

Narrative Description of how Source Compliance Will be Achieved. Briefly explain your plan for achieving compliance:

Schedule of Compliance. Provide a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance, including a date for final compliance.

Remedial Measure or Action	Date to be Achieved

C. SCHEDULE FOR SUBMISSION OF PROGRESS REPORTS

Only complete this section if you are required to submit one or more schedules of compliance in section B or if an applicable requirement requires submittal of a progress report. If a schedule of compliance is required, your progress report should start within 6 months of application submittal and subsequently, no less than every six months. One progress report may include information on multiple schedules of compliance.

Contents of Progress Report (describe):

First Report____/____/___ Frequency of Submittal_____

D. SCHEDULE FOR SUBMISSION OF COMPLIANCE CERTIFICATIONS

This section must be completed once by every source. Indicate when you would prefer to submit compliance certifications during the term of your permit (at least once per year).

Frequency of submittal_____**ANNUAL**_____ Beginning ___5_/__1__/__2014__

E. COMPLIANCE WITH ENHANCED MONITORING & COMPLIANCE CERTIFICATION REQUIREMENTS

This section must be completed once by every source. To certify compliance with these, you must be able to certify compliance for every applicable requirement related to monitoring and compliance certification at every unit.

Enhanced Monitoring Requirements: n/a In Compliance ____ Not In Compliance

Compliance Certification Requirements: n/a In Compliance ____ Not In Compliance

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Federal Operating Permit Program (40 CFR Part 71)

EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID Riverview 4 & 100-3031H

B. Identification and Quantification of Emissions

First, list each air pollutant that is either regulated at the unit or present in major amounts, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. You may round to the nearest tenth of a ton for yearly values or tenth of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
VOC	242.5	55.4	242.5	
NOx	46.1	10.5	46.1	
SO2	0.3	0.1	0.3	
CO2e	77,958.55	17,798.8	77,958.55	
HAP	20.7	4.73	20.7	
PM	10.6	2.4	10.6	
CO	219.6	50.1	219.6	

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Federal Operating Permit Program (40 CFR Part 71)

FEE CALCULATION WORKSHEET (FEE)

Use this form initially, or thereafter on an annual basis, to calculate part 71 fees.

A. General Information

Type of fee (Check one): _x__Initial ___Annual

Deadline for submitting fee calculation worksheet __June 2013___

For initial fees, emissions are based on (Check one):

___ Actual emissions for the preceding calendar year. (Required in most circumstances.)

_x__ Estimates of actual emissions for the current calendar year. (Required when operations commenced during the preceding calendar year.)

Date commenced operations __7__/_1__/__2012____

___ Estimates of actual emissions for the preceding calendar year. (Optional after a part 71 permit was issued to replace a part 70 permit, but only if initial fee payment is due between January 1 and March 31; otherwise use actual emissions for the preceding calendar year.)

For annual fee payment, you are required to use actual emissions for the preceding calendar year.

B. Source Information: Complete this section only if you are paying fees but not applying for a permit.

Source or facility name _____N/A_____

Mailing address: Street or P.O. Box _____

City_____ State_____ ZIP_____ - _____

Contact person_____ Title_____

Telephone (_____) _____ - _____ Ext_____ Part 71 permit no. _____

C. Certification of Truth, Accuracy and Completeness: Only needed if not submitting a separate form CTAC.

I certify under penalty of law, based on information and belief formed after reasonable inquiry, the statements and information contained in this submittal (form and attachments) are true, accurate and complete.

Name (signed) _____SEE cert FORM____

Name (typed) _____ Date:____/____/_____

D. Annual Emissions Report for Fee Calculation Purposes -- Non-HAP

You may use this to report actual emissions (tons per year) of regulated pollutants (for fee calculation) on a calendar-year basis for both initial and annual fee calculation purposes. Section E is designed to report HAP emissions. Quantify all actual emissions, including fugitives, but do not include insignificant emissions and certain regulated air pollutants that are not counted for fee purposes, such as CO (see instructions). You may round to the nearest tenth of a ton on this form. Sum the emissions in each column and enter a subtotal at the bottom of the page. If any subtotal exceeds 4,000 tons, enter 4,000 for that column.

This data is for 2012 (year)

Emission Unit ID	NOx	VOC	SO2	PM10	Lead	Other
TK-1 to TK-12	0.4	2.8	N/A	0.1	N/A	
TK-13 to TK-14	N/A	0.7	N/A	N/A	N/A	
F-1 & F-2	38.9	211.5	0.3	10.2	N/A	
FUG	N/A	11.4	N/A	N/A	N/A	
TLO	N/A	43.8	N/A	N/A	N/A	
E-1	6.4	2.4	N/A	0.3	N/A	
Total	46.1	242.5	0.3	10.6	0	

SUBTOTALS

E. Annual Emissions Report for Fee Calculation Purposes -- HAP

HAP Identification. Identify individual HAP emitted at the facility, identify the CAS number, and assign a unique identifier for use in the second table in this section. Whenever assigning identifier codes, use "HAP1" for the first, "HAP2" for the second, and so on.

Name of HAP	CAS No	Identifier
Benzene		HAP1
Toluene		HAP2
Ethylbenzene		HAP3
Xylenes		HAP4
n-Hexane		HAP5

HAP Emissions. Report the actual emissions of individual HAP identified above. Use the identifiers assigned in the table above. Include all emissions, including fugitives, and do not include insignificant emissions. You may round to the nearest tenth of a ton. Sum the emissions in each column and enter a subtotal at the bottom of the page. If any subtotal exceeds 4,000 tons, enter 4,000.

This data is for _2012_____ (year)

Emissions Unit ID	Actual Emissions (Tons/Year)							
	HAP1	HAP2	HAP3	HAP4	HAP5	HAP___	HAP___	HAP___
TK-1 to TK-12	N/A	N/A	N/A	N/A	N/A			
TK-13 to TK-14	N/A	N/A	N/A	N/A	N/A			
F-1 & F-2	1.5	1.1	N/A	0.2	4.9			
FUG	0.1	0.2	0.2	0.3	0.5			
TLO	0.3	1.5	1.3	2.2	2.6			
E-1	N/A	N/A	N/A	N/A	N/A			
SUBTOTALS	1.9	2.8	1.5	2.7	8.0			

F. Fee Calculation Worksheet

This section is used to calculate the total fee owed for both initial and annual fee payment purposes. Reconciliation is only for cases where you are paying the annual fee and you used any type of estimate of actual emissions when you calculated the initial fee. If you do not need to reconcile fees, only complete line 1-5 and then skip down to lines 21 – 26. See instructions for more detailed explanation.

1. Sum the emissions from section D of this form (non-HAP) and enter the total (tons).	299.5
2. Sum the emissions from section E of this form (HAP) and enter the total (tons).	16.9
3. Sum lines 1 and 2.	316.4
4. Enter the emissions that were counted twice. If none, enter "0."	16.9
5. Subtract line 4 from line 3, round to the nearest ton, and enter the result here.	299.5

RECONCILIATION
(WHEN INITIAL FEES WERE BASED ON ESTIMATES FOR THE "CURRENT" CALENDAR YEAR)

Only complete lines 6-10 if you are paying the first annual fee and initial fees were based on estimated actual emissions for the calendar year in which you paid initial fees; otherwise skip to line 11 or to line 21.

6. Enter the total estimated actual emissions for the year the initial fee was paid (previously reported on line 5 of the initial fee form).	
7. If line 5 is greater than line 6, subtract line 6 from line 5, and enter the result. Otherwise enter "0."	
8. If line 6 is greater than line 5, subtract line 5 from line 6, and enter the result. Otherwise enter "0."	
9. If line 7 is greater than 0, multiply line 7 by last year's fee rate ($/ton) and enter the result here. This is the underpayment. Go to line 21.	
10. If line 8 is greater than 0, multiply line 8 by last year's fee rate ($/ton) and enter the result here. This is the overpayment. Go to line 21.	

RECONCILIATION
(WHEN INITIAL FEES WERE BASED ON ESTIMATES FOR THE "PRECEDING" CALENDAR YEAR)

Only complete lines 11-20 if you are paying the first annual fee and initial fees were based on estimated actual emissions for the calendar year preceding initial fee payment; otherwise skip to line 21. If completing this section, you will also need to complete sections D and E to report actual emissions for the calendar year preceding initial fee payment.

11. Sum the actual emissions from section D (non-HAP) for the calendar year preceding initial fee payment and enter the result here.	
12. Sum the actual emissions from section E (HAP) for the calendar year preceding initial fee payment and enter the result here.	
13. Add lines 11 and 12 and enter the total here. These are total actual emissions for the calendar year preceding initial fee payment.	
14. Enter double counted emission from line 13 here. If none, enter "0."	
15. Subtract line 14 from line 13, round to the nearest ton, and enter the result here.	

16. Enter the total estimated actual emissions previously reported on line 5 of the initial fee form. These are estimated actual emissions for the calendar year preceding initial fee payment.	
17. If line 15 is greater than line 16, subtract line 16 from line 15, and enter the result here. Otherwise enter "0."	
18. If line 16 is greater than line 15, subtract line 15 from line 16, and enter the result here. Otherwise enter "0."	
19. If line 17 is greater than 0, multiply line 17 by last year's fee rate ($/ton) and enter the result here. This is the underpayment.	
20. If line 18 is greater than 0, multiply line 18 by last year's fee rate ($/ton) and enter the result on this line. This is the overpayment.	
FEE CALCULATION	
21. Multiply line 5 (tons) by the current fee rate ($/ton) and enter the result here.	47.11* 299.5 = $14,109.45
22. Enter any underpayment from line 9 or 19 here. Otherwise enter "0."	
23. Enter any overpayment from line 10 or 20 here. Otherwise enter "0."	
24. If line 22 is greater than "0," add it to line 21 and enter the result here. If line 23 is greater than "0," subtract this from line 21 and enter the result here. Otherwise enter the amount on line 21 here. This is the fee adjusted for reconciliation.	
25. If your account was credited for fee assessment error since the last time you paid fees, enter the amount of the credit here. Otherwise enter "0."	
26. Subtract line 25 from line 24 and enter the result here. Stop here. This is the total fee amount that you must remit to EPA.	$14,109.45

United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)

CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS (CTAC)

This form must be completed, signed by the "Responsible Official" designated for the facility or emission unit, and sent with each submission of documents (i.e., application forms, updates to applications, reports, or any information required by a part 71 permit).

A. Responsible Official

Name: (Last) **Schaefer** (First) **James**

Title **Operations Manager**

Street or P.O. Box **600 17th Street**

City **Denver** State **CO** ZIP **80202**

Telephone **(303) 572- 9000** Ext. _____ Facsimile (____) _____ - _____

B. Certification of Truth, Accuracy and Completeness (to be signed by the responsible official)

I certify under penalty of law, based on information and belief formed after reasonable inquiry, the statements and information contained in these documents are true, accurate and complete.

Name (signed) _____

Name (typed) **James Schaefer** Date: 7 / 1 / 2013

Appendix B

Detailed Emission Calculations

Table C-1 EOG Resources, Inc. - Riverview 4 & 100-3031H Production Pad
Estimated Potential Criteria, Greenhouse Gas, & HAP Pollutant Total Emissions

		Annual Criteria Emission Rates						Annual Greenhouse Gas Emission Rates					Annual HAP Emission Rates								
ID	Emission Unit	NO_x	CO	VOC	SO_2	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O	Total Mass	CO_2e	BZ	Tol	EB	Xyl	HCHO	Acetal	Acro	N-Hex	Meth	224-TMP
1	Condensate Tanks	0.4 tpy	2.2 tpy	2.8 tpy	–	0.1 tpy	0.1 tpy	746.23 tpy	0.80 tpy	0.00 tpy	747.03 tpy	763.38 tpy	5.5 lb/yr	7.6 lb/yr	2.0 lb/yr	2.9 lb/yr	–	–	–	58.4 lb/yr	–	26.4 lb/yr
2	Produced Water Tanks	–	–	0.7 tpy	–	–	–	–	–	–	–	–	37.0 lb/yr	–	–	–	–	–	–	116.4 lb/yr	–	–
2	Temporary Gas Flare	38.9 tpy	211.5 tpy	181.4 tpy	0.3 tpy	10.2 tpy	10.2 tpy	71,249.95 tpy	197.76 tpy	0.13 tpy	71,447.84 tpy	75,442.08 tpy	2,997.5 lb/yr	2,136.0 lb/yr	44.9 lb/yr	372.6 lb/yr	–	–	–	9,698.3 lb/yr	–	0.0 lb/yr
3	Heater Treaters	0.4 tpy	0.4 tpy	–	–	–	–	530.39 tpy	0.01 tpy	0.01 tpy	530.41 tpy	533.62 tpy	0.0 lb/yr	0.0 lb/yr	–	–	0.7 lb/yr	–	–	15.9 lb/yr	–	–
4	Fugitive Equipment Leaks	–	–	11.4 tpy	–	–	–	–	5.52 tpy	–	5.52 tpy	115.94 tpy	149.0 lb/yr	425.2 lb/yr	321.5 lb/yr	562.4 lb/yr	–	–	–	924.9 lb/yr	–	0.0 lb/yr
5	Truck Loading	–	–	43.8 tpy	–	–	–	–	–	–	0.00 tpy	0.00 tpy	529.2 lb/yr	2,948.4 lb/yr	2,590.5 lb/yr	4,449.3 lb/yr	–	–	–	5,280.0 lb/yr	–	7,694.4 lb/yr
6	John Deere 6068HF485T	6.4 tpy	5.5 tpy	2.4 tpy	–	0.3 tpy	0.3 tpy	1,099.83 tpy	0.04 tpy	0.01 tpy	1,099.88 tpy	1,103.53 tpy	12.6 lb/yr	5.5 lb/yr	–	3.8 lb/yr	15.9 lb/yr	10.3 lb/yr	12.5 lb/yr	–	–	–
	Totals	**46.1 tpy**	**219.6 tpy**	**242.5 tpy**	**0.3 tpy**	**10.6 tpy**	**10.6 tpy**	**73,626.40 tpy**	**204.14 tpy**	**0.15 tpy**	**73,830.68 tpy**	**77,958.55 tpy**	**3,730.8 lb/yr**	**5,522.7 lb/yr**	**2,958.8 lb/yr**	**5,391.0 lb/yr**	**16.6 lb/yr**	**10.3 lb/yr**	**12.5 lb/yr**	**16,093.9 lb/yr**	**0.0 lb/yr**	**7,720.8 lb/yr**

Table C-2 EOG Resources, Inc. - Riverview 4 & 100-3031H Production Pad
Condensate Tank Site Specific Emission Factor Calculations

Emission Source:	Condensate Tanks
Designed Throughput:	1,220 bbl/day
Designed Throughput:	445,300 bbl/yr
PTE Throughput (1.2 x Design):	534,360 bbl/yr
Total VOC Destruction Efficiency:	98%
Operating Days per Year:	365 days/yr

Pollutant	Emission Factors [a] (lb/bbl)	Emissions (tpy) [c]	
		Uncontrolled	Controlled
VOC	0.63	141.17 tpy	2.82 tpy
Methane	0.18	39.88 tpy	0.80 tpy
CO_2	0.00	1.04 tpy	1.04 tpy
Benzene	0.001	276.0 lb/yr	5.5 lb/yr
n-Hexane	0.007	2,922.0 lb/yr	58.4 lb/yr
Toluene	0.001	378.0 lb/yr	7.6 lb/yr
Ethylbenzene	0.000	98.0 lb/yr	2.0 lb/yr
Xylenes	0.000	144.0 lb/yr	2.9 lb/yr
224-TMP	0.003	1,322.0 lb/yr	26.4 lb/yr

Notes:

(a) Emission Factor (lb/bbl) = (Uncontrolled Emissions, tpy) * (2,000 lb/ton) / (Design Throughput, bbl/yr)

(b) Potential to Emit (tpy) = (Emission Factor, lb/bbl) * (PTE Throuput, bbl/yr) / (2,000 lb/ton)

(c) Controlled and Uncontrolled Emissions taken from E&P Tanks Report

Table C-2a EOG Resources, Inc. - Riverview 4 & 100-3031H Production Pad
Vapor Combustion Unit (VCU) Emission Calculations for Condensate Tanks

Emission Source:	Condensate Tanks
Source Type:	VCU
Heat Input:	1.33 MMBtu/hr
Tank Vent Gas Flowrate:	688.3 scf/hr
Tank Vent Gas Flowrate:	6.03 MMscf/yr
Pilot Gas Flowrate:	16.8 scf/hr
Pilot Gas Flowrate:	0.15 MMscf/yr
Total Flowrate to Combustor Including Pilot:	6.18 MMscf/yr
Estimated HHV:	1,889 Btu/scf
Total VOC Destruction Efficiency:	98%
Sulfur Content of Fuel:	0.0020 gr/scf
Operating Hours per Year:	8,760 hr/yr

Pollutant	Emission Factors or Uncontrolled Emissions [a]	Emissions - Controlled	
		lb/hr [b], [c]	tpy [d]
NO_x	0.068 lb/MMBtu	0.09	0.40
CO	0.370 lb/MMBtu	0.49	2.16
SO_2	0.00030 lb/MMBtu	0.0004	0.0018
PM_{10}	40.0 µg / ℓ	0.018	0.0797
$PM_{2.5}$	40.0 µg / ℓ	0.018	0.0797
CO_2	247,185 lb/MMscf	170.13	745.19
N_2O	0.00022 lb/MMBtu	0.0003	0.0013

Notes:

(a) Emission factors are from AP-42 Tables 13.5-1 & 2 (Industrial Flares)

40 µg / L is for lightly smoking flare (this is conservative as this unit is smokeless in design).

SO_2 emissions based on AP42, which is based on 100% conversion of sulfur to SO_2 at 2000 grains/MMscf.

(b) Hourly Emission Rate (lb/hr) except for PM_{10} = (Emission Factor, lb/MMBtuf) * (Heat Input, MMBtu/hr)

(c) (MMscf CH_4) (10.6 scf E/scf CH_4) (0.0283 m^3/scf E) (40 µ PM_{10}/L E) (1000 l/m^3) (g/106 µg) (lb/453.59 g) / (hr/yr) = lb PM_{10} / hr

(d) Annual Emission Rate (tpy) = (Hourly Emission Rate, lb/hr) * (hr/yr) / (2,000 lb/ton)

Table C-3 ***EOG Resources, Inc. - Riverview 4 & 100-3031H Production Pad***
Produced Water Tank Emission Calculations

Daily Throughput	290 bbls/day
Annual Throughpu	105,850 bbls/yr
Days Per Year	365 days/yr
Hours per Year	8,760 hr/yr

Pollutant	Emission Factor [1]	Uncontrolled Emissions			Add-On Control & Efficiency [2]		Controlled Emissions		
		lb/hr	lb/yr	tpy			lb/hr	lb/yr	tpy
VOC	0.262 lb/bbl	3.17	27,732.7	13.87	Flare	95%	0.16	1,386.6	0.69
Benzene	0.007 lb/bbl	0.08	741.0	0.37	Flare	95%	0.00	37.0	0.02
n-Hexane	0.022 lb/bbl	0.27	2,328.7	1.16	Flare	95%	0.01	116.4	0.06

[1] CDPHE Emission Factors for produced water tanks.

Table C-3 ***EOG Resources, Inc. - Riverview 4 & 100-3031H Production Pad***
Flare Emission Calculations

Source Type:	Flare
Heat Input:	130.52 MMBtu/hr
Maximum Hourly Flowrate:	160,666.7 scf/hr
Average Hourly Flowrate:	87,805 scf/hr
Total Annual Flowrate:	769.2 MMscf/yr
Estimated HHV:	1,486 Btu/scf
Total VOC Destruction Efficiency:	98%
Molecular Weight:	25.6 lb/lb-mol
H_2S Content of Fuel	4.0 ppm H2S
Operating Hours per Year:	8,760 hr/yr

Pollutant	Emission Factors [a]	Emissions	
		lb/hr [b], [c]	tpy [d]
NO_x	0.068 lb/MMBtu	8.88	38.87
CO	0.370 lb/MMBtu	48.29	211.5
SO_2	0.00045 lb/MMBtu	0.06	0.26
PM_{10}	40.0 µg / ℓ^3	2.32	10.17
$PM_{2.5}$	40.0 µg / ℓ^3	2.32	10.17
CO_2 (Combustion)	184,476.269 lb/MMscf	16,197.91	70,946.86
N_2O	0.00022 lb/MMBtu	0.03	0.13

Pollutant	Wt % of Gas [e]	Emission Factor [f] (lb/MMscf)	VOC Emission Rates [g]			
			Uncontrolled		Controlled	
VOC	34.9621	23,583.1	2,070.7 lb/hr	9,069.70 tpy	41.41 lb/hr	181.39 tpy
CO_2 (uncombusted)	1.1683	788.1	69.2 lb/hr	303.09 tpy	69.20 lb/hr	303.09 tpy
CH_4	38.1174	25,711.4	2,257.6 lb/hr	9,888.24 tpy	45.15 lb/hr	197.76 tpy
Benzene	0.2889	194.9	17.11 lb/hr	74.94 tpy	0.34 lb/hr	1.50 tpy
Toluene	0.2058	138.9	12.19 lb/hr	53.40 tpy	0.24 lb/hr	1.07 tpy
Ethylbenzene	0.0043	2.9	0.26 lb/hr	1.12 tpy	0.01 lb/hr	0.02 tpy
Xylenes	0.0359	24.2	2.13 lb/hr	9.32 tpy	0.04 lb/hr	0.186 tpy
n-Hexane	0.9346	630.4	55.36 lb/hr	242.46 tpy	1.11 lb/hr	4.85 tpy
2,2,4-TMP	0.0000	0.0	0.00 lb/hr	0.00 tpy	0.00 lb/hr	0.00 tpy

Notes:

(a) Emission factors are from AP-42 Tables 13.5-1 & 2 (Industrial Flares), 40 CFR 98 Equation W-21 and 40 CFR 98 Table C-2

40 µg / L is for lightly smoking flare (this is conservative as this unit is smokeless in design).

SO_2 emissions based on complete conversion of H2S to SO2

(ppm H2S) / (379 scf/lb-mole) * (1 mole SO2/mole H2S) * (64 lb SO2/lb-mole) / (Btu/scf) = lb SO_2 / MMBtu

(b) Hourly Emission Rate except for $PM_{10;\ lb/hr}$ = (Emission Factor, lb/MMBtu) * (Heat Input, MMBtu/hr)

(c) (MMscf CH_4) (10.6 scf E/scf CH_4) (0.0283 m^3/scf E) (40 µ PM_{10}/L E) (1000 l/m^3) (g/106 µg) (lb/453.59 g) / (hr/yr) = lb PM_{10} / hr

(d) Annual Emission Rate (tpy) = (Hourly Emission Rate, lb/hr) * (hr/yr) / (2,000 lb/ton)

(e) Based on the weighted average flare gas analysis

(f) Emission Factor (lb/MMscf) = (MW, lb/lb-mole) / (379 scf/lb-mole) * (consituent weight %) / 100 / 10^6

No control is provided for CO_2 in the flare waste gas

(e) VOC and HAP emisssions:

Uncontrolled

(scf/hr) * (lb/MMscf) / 10^6 = lb/hr

(lb /hr) (hr/yr) (ton/2,000 lb) = ton/yr

Controlled

(lb/hr) (100 - DE %) / (100) = lb/hr

(ton/yr) (100 - DE%) / (100) = ton/yr

Table C-4 ***EOG Resources, Inc. - Riverview 4 & 100-3031H Production Pad***
VOC Emissions from Truck Loading [AP-42 Chapter 5.2 (1/95)]

Site	Product	Loading Mode	Sales	Sales (1,000 gal./year)	Saturation Factor (S) [a]	True Vapor Pressure (P) [psia]	Molecular Weight (M) [lb/lb-mol]	Bulk Temp. (T) [F]	Uncontrolled Loading Loss (L_L) [b] [lb/1,000-gal]	Uncontrolled VOC Emissions	Control Efficiency [%]	Controlled Loading Loss (L_L) [lb/1,000-gal]	Controlled VOC Emissions
Riverview 4 & 100-3031H	Condensate	Submerged, Dedicated Normal Service	445,300 bbl/year	18,702.6	0.6	9.14	34.38	41.43	4.68	43.8 tpy	Uncontrolled	4.68	43.8 tpy

(a) Source: AP-42 Table 5.2-1 (1/95)

(b) Equation 1 for loading losses: (12.46) * (SPM / T) * W = L_L

Where:

L_L = loading losses, lbs/1000 gal of liquid loaded

S = saturation factor

P = true vapor pressure of liquid loaded (psia) base on regression analysis for crude oil (AP 42 Chapter 7.1 page 56) and a reid vapor pressure of 14.3 psia

M = Molecular wt of vapors lb/lb-mol from E&P Tanks Results

T = temperature of bulk liquids loaded °R (°F + 460) from EPA TANKS Meterological Database for Denver, CO

AP-42 Chapter 5.2, Table 5.2-1 (1/95)	
Tank trucks and rail tank cars Submerged loading of a clean cargo tank	0.5
Submerged loading: dedicated normal service	**0.6**
Submerged loading: dedicated vapor balance service	1.0
Splash loading of a clean cargo tank	1.45
Splash loading: dedicated normal service	1.45
Splash loading: dedicated vapor balance service	1
Marine vesselsa Submerged loading: ships	0.2
Submerged loading: barges	0.5

HAP	Wt. % of THC [c]	Loading Loss lb/1,000-gal	Uncontrolled HAP Emissions [d]		Controlled HAP Emissions [d]	
Benzene	0.6040%	0.0283	529.17 lb/yr	0.26 tpy	529.17 lb/yr	0.26 tpy
Toluene	3.3651%	0.1576	2,948.38 lb/yr	1.47 tpy	2,948.38 lb/yr	1.47 tpy
Ethylbenzene	2.9567%	0.1385	2,590.50 lb/yr	1.30 tpy	2,590.50 lb/yr	1.30 tpy
Xylenes	5.0782%	0.2379	4,449.30 lb/yr	2.22 tpy	4,449.30 lb/yr	2.22 tpy
n-Hexane	6.0263%	0.2823	5,279.98 lb/yr	2.64 tpy	5,279.98 lb/yr	2.64 tpy
2,2,4-Trimethylpentane	8.7819%	0.4114	7,694.38 lb/yr	3.85 tpy	7,694.38 lb/yr	3.85 tpy
Total			##########	**11.75 tpy**	23,491.72 lb/yr	**11.75 tpy**

(c) Based on the E&P Tanks Results

(d) HAP Emissions, tpy = (VOC Emissions, tpy) * (HAP Wt. % of THC)

Table C-5 EOG Resources, Inc. - Riverview 4 & 100-3031H Production Pad
Heater Treater Criteria Pollutant Emissions Calculations

Emission Source:	Heater Treater
Source Type:	Heater
Heat Input:	0.75 MMBtu/hr
Flowrate:	504.6 scf/hr
Flowrate:	4.4 MMscf/yr
Estimated HHV:	1,486 Btu/scf
Sulfur Content of Fuel:	4.0 ppm H2S
Operating Hours per Year:	8,760 hr/yr
Number of Units:	2

Pollutant	Emission Factors [a]	One Heater				Total	
		Short-term		Annual		2 Heaters	
		lb/hr [b], [c]	g/sec	tpy [d]	g/sec	lb/hr	tpy
NO_x	100.0 lb/MMscf	0.050	0.0064	0.22	0.0064	0.101	0.44
CO	84.0 lb/MMscf	0.042	0.0053	0.19	0.0053	0.085	0.37
VOC	5.5 lb/MMscf	0.0028	0.0003	0.012	0.0003	0.0056	0.024
SO_2	0.00045 lb/MMBtu	0.0003	0.0000	0.001	0.0000	0.0007	0.003
PM_{10}	7.6 lb/MMscf	0.0038	0.0005	0.017	0.0005	0.0077	0.034
$PM_{2.5}$	7.6 lb/MMscf	0.0038	0.0005	0.017	0.0005	0.0077	0.034
CO_2	120,000 lb/MMscf	60.5471	7.6288	265.196	7.6288	121.0942	530.393
CH_4	2.3 lb/MMscf	0.0012	0.0001	0.005	0.0001	0.0023	0.010
N_2O	2.2 lb/MMscf	0.0011	0.0001	0.005	0.0001	0.0022	0.010

Notes:

(a) Emission factors are from AP-42 Tables 1.4-1 & 2 (small boilers).

SO2 emissions based on complete conversion of H2S to SO2

(ppm H2S) / (379 scf/lb-mole) * (1 mole SO2/mole H2S) * (64 lb SO2/lb-mole) / (Btu/scf) = lb SO_2 / MMBtu

(b) Hourly Emission Rate (lb/hr) = (Emission Factor, lb/MMscf) * (Flowrate, scf/hr) * (MM / 1,000,000)

(c) Hourly Emission Rate (lb/hr) = (Emission Factor, lb/MMBtuf) * (Heat Input, MMBtu/hr)

(d) Annual Emission Rate (tpy) = (Hourly Emission Rate, lb/hr) * (hr/yr) / (2,000 lb/ton)

Table C-5a

EOG Resources, Inc. - Riverview 4 & 100-3031H Production Pad
Heater Treater Hazardous Air Pollutant Emissions Calculations

Natural Gas-Fired Heater	8,760 hr/yr
Maximum Heat Input	0.75 MMBtu/hr
Natural Gas Heating Value	1,486 Btu/scf
Fuel Consumption (HHV)	504.6 scf/hr
Fuel Consumption (HHV)	4.42 MMscf/yr
Number of Heaters	2

Pollutant	Emission Factor (lb/MMscf) [a]	Emission Rates					
		One Heater			2 Heaters		
		(lb/hr) [b]	(lbs/yr)	(tpy) [c]	(lb/hr)	(lbs/yr)	(tpy)
2-Methylnaphthalene	2.4E-05	1.21E-08	1.06E-04	5.30E-08	2.42E-08	2.12E-04	1.06E-07
3-Methylchloranthrene	1.8E-06	9.08E-10	7.96E-06	3.98E-09	1.82E-09	1.59E-05	7.96E-09
7,12-Dimethylbenz(a)anthracene	1.6E-05	8.07E-09	7.07E-05	3.54E-08	1.61E-08	1.41E-04	7.07E-08
Acenaphthene	1.8E-06	9.08E-10	7.96E-06	3.98E-09	1.82E-09	1.59E-05	7.96E-09
Acenaphthylene	1.8E-06	9.08E-10	7.96E-06	3.98E-09	1.82E-09	1.59E-05	7.96E-09
Anthracene	2.4E-06	1.21E-09	1.06E-05	5.30E-09	2.42E-09	2.12E-05	1.06E-08
Benz(a)anthracene	1.8E-06	9.08E-10	7.96E-06	3.98E-09	1.82E-09	1.59E-05	7.96E-09
Benzene	2.1E-03	1.06E-06	9.28E-03	4.64E-06	2.12E-06	1.86E-02	9.28E-06
Benzo(a)pyrene	1.2E-06	6.05E-10	5.30E-06	2.65E-09	1.21E-09	1.06E-05	5.30E-09
Benzo(b)fluoranthene	1.8E-06	9.08E-10	7.96E-06	3.98E-09	1.82E-09	1.59E-05	7.96E-09
Benzo(g,h,i)perylene	1.2E-06	6.05E-10	5.30E-06	2.65E-09	1.21E-09	1.06E-05	5.30E-09
Benzo(k)fluoranthene	1.8E-06	9.08E-10	7.96E-06	3.98E-09	1.82E-09	1.59E-05	7.96E-09
Chrysene	1.8E-06	9.08E-10	7.96E-06	3.98E-09	1.82E-09	1.59E-05	7.96E-09
Dibenzo(a,h)anthracene	1.2E-06	6.05E-10	5.30E-06	2.65E-09	1.21E-09	1.06E-05	5.30E-09
Dichlorobenzene	1.2E-03	6.05E-07	5.30E-03	2.65E-06	1.21E-06	1.06E-02	5.30E-06
Fluoranthene	3.0E-06	1.51E-09	1.33E-05	6.63E-09	3.03E-09	2.65E-05	1.33E-08
Fluorene	2.8E-06	1.41E-09	1.24E-05	6.19E-09	2.83E-09	2.48E-05	1.24E-08
Formaldehyde	7.5E-02	3.78E-05	3.31E-01	1.66E-04	7.57E-05	6.63E-01	3.31E-04
Hexane	1.8E+00	9.08E-04	7.96E+00	**3.98E-03**	1.82E-03	1.59E+01	**7.96E-03**
Indeno(1,2,3-cd)pyrene	1.8E-06	9.08E-10	7.96E-06	3.98E-09	1.82E-09	1.59E-05	7.96E-09
Naphthalene	6.1E-04	3.08E-07	2.70E-03	1.35E-06	6.16E-07	5.39E-03	2.70E-06
Phenanathrene	1.7E-05	8.58E-09	7.51E-05	3.76E-08	1.72E-08	1.50E-04	7.51E-08
Pyrene	5.0E-06	2.52E-09	2.21E-05	1.10E-08	5.05E-09	4.42E-05	2.21E-08
Toluene	3.4E-03	1.72E-06	1.50E-02	7.51E-06	3.43E-06	3.01E-02	1.50E-05
			Heater Total HAPs	**0.0042 tpy**			**0.0083 tpy**
			Maximum Individual HAP	**0.0040 tpy**			**0.0080 tpy**

Notes:

(a) Emission factors from AP-42, Section 1.4, Table 1.4-3 (7/98).

(b) Hourly Emission Rate (lb/hr) = [Heat Input Rate (MMBtu/Hr) * Emission Factor (lb/MMscf)] / [Natural Gas Heating Value (BTU/scf)]

(c) Annual Emission Rate (tpy) = (Average Hourly Emission Rate, lb/hr) * (8760 hr/yr) / (2,000 lb/ton)

Table C-6 ***EOG Resources, Inc. - Riverview 4 & 100-3031H Production Pad***
Fugitive Equipment Leaks Emissions Calculations

Emission Source:	Fugitives
Operating Hours:	8,760 hr/yr
Equipment Count	
Well Heads:	2
Horizontal Well Heater Treaters:	2
Vertical Well Heater Treaters:	0
Oil/Condensate Tanks:	12
Produced Water Tanks:	2
Produced Water Vaults:	0
Combustors:	2
Gas Meter Houses:	2

		Emission		Emissions																															
				VOC			Methane			Benzene			Toluene			Ethylbenzene			Xylenes			n-Hexane			n-Hexane			2,2,4-Trimethylpentane								
Service	Equipment Type	Factors [a] kg/hr/source	Count [b]	wt %	lb/hr [c]	tpy [d]	wt %	lb/hr [c]	tpy [d]	wt %	lb/hr [c]	tpy [d]	wt %	lb/hr [c]	tpy [d]	wt %	lb/hr [c]	tpy [d]	wt %	lb/hr [c]	tpy [d]	wt %	lb/hr [c]	tpy [d]	wt %	lb/hr [c]	tpy [d]	wt %	lb/hr [c]	tpy [d]						
Gas [e]	Connectors	2.00E-04	1096	34.96%	0.17	0.74	38.12%	0.18	0.81	0.29%	0.00	0.01	0.21%	0.00	0.00	0.00%	0.00	0.00	0.04%	0.00	0.00	0.93%	0.00	0.02	0.93%	0.00	0.02	0.00%	0.00	0.00						
	Flanges	3.90E-04	114		0.03	0.15		0.04	0.16		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00						
	Open-Ended	2.00E-03	74		0.11	0.50		0.12	0.54		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.01		0.00	0.01		0.00	0.00						
	Pump Seals	2.40E-03	0		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00						
	Valves	4.50E-03	182		0.63	2.76		0.69	3.01		0.01	0.02		0.00	0.02		0.00	0.00		0.00	0.00		0.02	0.07		0.02	0.07		0.00	0.00						
	Others	8.80E-03	30		0.20	0.89		0.22	0.97		0.00	0.01		0.00	0.01		0.00	0.00		0.00	0.00		0.01	0.02		0.01	0.02		0.00	0.00						
Light Oil [f]	Connectors	2.10E-04	624	98.13%	0.28	1.24	0.36%	0.00	0.00	0.60%	0.00	0.01	3.36%	0.01	0.04	2.96%	0.01	0.04	5.08%	0.01	0.06	6.02%	0.02	0.08	6.02%	0.02	0.08	8.78%	0.03	0.11						
	Flanges	1.10E-04	282		0.07	0.29		0.00	0.00		0.00	0.00		0.00	0.01		0.00	0.01		0.00	0.02		0.00	0.02		0.00	0.02		0.01	0.03						
	Open-Ended	1.40E-03	40		0.12	0.53		0.00	0.00		0.00	0.00		0.00	0.02		0.00	0.02		0.01	0.03		0.01	0.03		0.01	0.03		0.01	0.05						
	Pump Seals	1.30E-02	0		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00						
	Valves	2.50E-03	138		0.75	3.27		0.00	0.01		0.00	0.02		0.03	0.11		0.02	0.10		0.04	0.17		0.05	0.20		0.05	0.20		0.07	0.29						
	Others	7.50E-03	0		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00						
Oil/Water [g]	Connectors	1.10E-04	364	100.00%	0.09	0.39	0.00%	0.00	0.00	0.12%	0.00	0.00	0.03%	0.00	0.00	0.00%	0.00	0.00	0.00%	0.00	0.00	0.00%	0.00	0.00	0.00%	0.00	0.00	0.00%	0.00	0.00						
	Flanges	2.90E-06	160		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00						
	Open-Ended	2.50E-04	10		0.01	0.02		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00						
	Pump Seals	2.40E-05	0		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00						
	Valves	9.80E-05	62		0.01	0.06		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00						
	Others	1.40E-02	4		0.12	0.54		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00						
Total			1896		2.60	11.40		1.26	5.52		0.02	0.07		0.05	0.21		0.04	0.16		0.06	0.28		0.11	0.46		0.11	0.46		0.11	0.48						

Notes

(a) Emission factors are from Table 2-4 of the "Protocol for Equipment Leak Emission Estimates", EPA-453/R-95-017.

(b) Based on a representative component count for each piece of equipment

(c) Hourly Emission Rate (lb/hr) = (Emission Factor, kg/hour/source) * (count) * (1000 kg/g) / (453.59 g/lb) * (wt %)

(d) Annual Emission Rate (tpy) = (Hourly Emission Rate, lb/hr) * (hr/yr) / (2,000 lb/ton)

(e) Weight Percents of Hydrocarbons taken from weight average sales gas analysis

(f) Weight Percents of Hydrocarbons taken from weighted average condensate analysis

(g) Gas Research Institute (GRI) Technical Reference Manual for GRI-HAPCalc, Software for Estimating Emissions of Hazardous Air Pollutants and Criteria Air Pollutants from Natural Gas Industry Operations, GRI-96/0346

Table C-7 ***EOG Resources, Inc. - Riverview 4 & 100-3031H Production Pad***
Generator Engine - IC Engine Criteria Pollutant Emissions Calculations

19300

Engine Data			
IC Engine Make	John Deere	**Higher Heating Value**	138,000 Btu/gal
IC Engine Model	6068HF485T	**Sulfur Content**	15.0 ppm
Power Rating	220 bhp	**Fuel Consumption**	11.2 gal/hr
Heat Rate (LHV)	7,000 Btu/bhp-hr	**Fuel Consumption**	97.8 Mgal/yr
Duty (input)	1.54 MMBtu/hr	**Hours per Year**	8,760 hr/yr

Pollutant	Controlled Emission Factors	Uncontrolled		Source of Emission Factors
		lb/hr	TPY	
NO_x	3.00 g/bhp-hr	1.46	6.37	USEPA Tier 3 Standards
CO	2.60 g/bhp-hr	1.26	5.52	USEPA Tier 3 Standards
VOC	1.14 g/bhp-hr	0.55	2.42	AP42 Tbl 3.3-1; Diesel
SO_2	0.00078 lb/MMBtu	0.001	0.005	Mass Balance (USLD Fuel)
PM_{10}	0.15 g/bhp-hr	0.07	0.32	USEPA Tier 3 Standards
$PM_{2.5}$	0.15 g/bhp-hr	0.07	0.32	USEPA Tier 3 Standards
CO_2	163.05 lb/MMBtu	251.103	1,099.831	40 CFR 98 Table C-1
CH_4	0.007 lb/MMBtu	0.010	0.045	40 CFR 98 Table C-1
N_2O	0.001 lb/MMBtu	0.002	0.009	40 CFR 98 Table C-1

Sample Calcs:

(bhp) (Btu/bhp-hr) (MM/10^6) = MMBtu/hr; (MMBtu/hr) / (Btu/scf) (10^6/MM) = scf/hr

(g/bhp-hr) (bhp) (lb/453.59 g) = lb/hr; (lb/MMBtu) (MMBtu/hr) = lb/hr; (lb/hr) (100 - % control) / 100 = lb/hr

(lb/hr) (hrs/yr) (ton/2000 lb) = tons/yr; (tpy) (100 - % control) / 100 = tpy

Notes:

Emission factors for Nox, CO and PM from USEPA Tier 3 Standards.

SO_2 emissions based on 100% conversion of sulfur to SO_2 for Ultra Low Sulfur Diesel (USLD).

Table C-7a ***EOG Resources, Inc. - Riverview 4 & 100-3031H Production Pad***
Compressor - IC Engine HAP Emissions Calculations

Pollutant	Emission Factor [1]	Uncontrolled Emission Rates		Controlled Emission Rates		
		One Engine		One Engine		
		(lb/hr) [2]	(lbs/yr) [3]	(lb/hr) [2]	(lbs/yr) [3]	(tpy) [4]
1.3-Butadiene	3.91E-05 lb/MMBtu	0.0001	0.53	0.0001	0.53	0.0003
Acetaldehyde	7.67E-04 lb/MMBtu	0.0012	10.35	0.0012	10.35	0.0052
Acrolein	9.25E-04 lb/MMBtu	0.0014	12.48	0.0014	12.48	0.0062
Benzene	9.33E-04 lb/MMBtu	0.0014	12.59	0.0014	12.59	0.0063
Formaldehyde	1.18E-03 lb/MMBtu	0.0018	15.92	0.0018	15.92	0.0080
Naphthalene	8.48E-05 lb/MMBtu	0.0001	1.14	0.0001	1.14	0.0006
PAH	1.68E-04 lb/MMBtu	0.0003	2.27	0.0003	2.27	0.0011
Toluene	4.09E-04 lb/MMBtu	0.0006	5.52	0.0006	5.52	0.0028
Xylene	2.85E-04 lb/MMBtu	0.0004	3.84	0.0004	3.84	0.0019
			Totals	**0.01**	**64.6**	**0.03**
			Maximum Individual HAP (HCHO)			**0.01**

Hours of Operation 8,760 hr/yr
Horsepower 220 bhp
Specific Fuel Consumption 7,000 Btu/bhp-hr

Heat Input [4] 1.54 MMBtu/hr

Notes:

[1] Emission factors from AP-42, Section 3.3, Table 3.3-1 (10/96) - Diesel Fuel Engines

[2] (MMBtu/hr) (lb/MMBtu) = lb/hr; (lb/hr) (100 - % control) / 100 = lb/hr

[3] (b/hr) (8760 hr/yr) / (2,000 lb/ton) = tpy; (tpy) (100 - % control) / 100 = tpy

[4] Heat input rate for the engine is based on fuel consumption rate of 7,000 Btu/bhp-hr for one engine from AP-42 Section 3.3.
[Btu/bhp-hr] * [bhp] / 1,000,000 = MMBtu/hr

Appendix B-1

E&P Tanks Model Output

****
* Project Setup Information *
****

Project File : Untitled.Ept
Flowsheet Selection : Oil Tank with Separator
Calculation Method : AP42
Control Efficiency : 98.0%
Known Separator Stream : Low Pressure Oil
Entering Air Composition : No

Filed Name : EOG Resources, Inc.
Well Name : Riverview 4 & 100-3031H
Date : 2013.06.28

****
* Data Input *
****

Separator Pressure : 47.00[psig]
Separator Temperature : 145.00[F]
Ambient Pressure : 13.818[psia]
Ambient Temperature : 41.43[F]
C10+ SG : 0.8224
C10+ MW : 229.86

-- Low Pressure Oil ----------

No.	Component	mol %
1	H2S	0.0000
2	O2	0.0000
3	CO2	0.0114
4	N2	0.0286
5	C1	0.7881
6	C2	1.7271
7	C3	3.4767
8	i-C4	0.8941
9	n-C4	3.3799
10	i-C5	1.7659
11	n-C5	2.8766
12	C6	2.7246
13	C7	7.4612
14	C8	6.9898
15	C9	4.7559
16	C10+	53.7098
17	Benzene	0.2728
18	Toluene	1.2883
19	E-Benzene	0.9825
20	Xylenes	1.6874
21	n-C6	2.4672
22	224Trimethylp	2.7122

-- Sales Oil ----------
Production Rate : 1220[bbl/day]
Days of Annual Operation : 365 [days/year]
API Gravity : 44.8
Reid Vapor Pressure : 14.33[psia]
Bulk Temperature : 41.43[F]

-- Tank and Shell Data ----------
Diameter : 20.00[ft]
Shell Height : 12.00[ft]
Cone Roof Slope : 0.06
Average Liquid Height : 10.00[ft]
Vent Pressure Range : 0.06[psi]
Solar Absorbance : 0.54

-- Meteorological Data ----------

City	: Billings, MT
Ambient Pressure	: 13.818[psia]
Ambient Temperature	: 41.43[F]
Min Ambient Temperature	: 29.04[F]
Max Ambient Temperature	: 53.817[F]
Total Solar Insolation	: 1217.50[Btu/ft^2*day]

****

* Calculation Results *

****

-- Emission Summary ----------

Item	Uncontrolled [ton/yr]	Uncontrolled [lb/hr]	Controlled [ton/yr]	Controlled [lb/hr]
Total HAPs	2.570	0.587	0.051	0.012
Total HC	258.037	58.913	5.161	1.178
VOCs, C2+	218.156	49.807	4.363	0.996
VOCs, C3+	141.172	32.231	2.823	0.645

Uncontrolled Recovery Info.

Vapor	16.5200	[MSCFD]
HC Vapor	16.2600	[MSCFD]
GOR	13.54	[SCF/bbl]

-- Emission Composition ----------

No	Component	Uncontrolled [ton/yr]	Uncontrolled [lb/hr]	Controlled [ton/yr]	Controlled [lb/hr]
1	H2S	0.000	0.000	0.000	0.000
2	O2	0.000	0.000	0.000	0.000
3	CO2	1.043	0.238	1.043	0.238
4	N2	2.948	0.673	2.948	0.673
5	C1	39.881	9.105	0.798	0.182
6	C2	76.984	17.576	1.540	0.352
7	C3	81.569	18.623	1.631	0.372
8	i-C4	10.702	2.443	0.214	0.049
9	n-C4	27.835	6.355	0.557	0.127
10	i-C5	6.337	1.447	0.127	0.029
11	n-C5	7.386	1.686	0.148	0.034
12	C6	2.086	0.476	0.042	0.010
13	C7	1.959	0.447	0.039	0.009
14	C8	0.588	0.134	0.012	0.003
15	C9	0.137	0.031	0.003	0.001
16	C10+	0.001	0.000	0.000	0.000
17	Benzene	0.138	0.032	0.003	0.001
18	Toluene	0.189	0.043	0.004	0.001
19	E-Benzene	0.049	0.011	0.001	0.000
20	Xylenes	0.072	0.016	0.001	0.000
21	n-C6	1.461	0.334	0.029	0.007
22	224Trimethylp	0.661	0.151	0.013	0.003
	Total	262.026	59.823	5.241	1.196

-- Stream Data ----------

No.	Component	MW	LP Oil mol %	Flash Oil mol %	Sale Oil mol %	Flash Gas mol %	W&S Gas mol %	Total Emissions mol %
1	H2S	34.80	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	O2	32.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	CO2	44.01	0.0114	0.0056	0.0054	0.2976	0.3031	0.2978
4	N2	28.01	0.0286	0.0020	0.0014	1.3493	0.6981	1.3225
5	C1	16.04	0.7881	0.1714	0.1487	31.4452	26.4711	31.2410
6	C2	30.07	1.7271	1.1162	1.0879	32.0964	33.9949	32.1744
7	C3	44.10	3.4767	3.0809	3.0616	23.1505	25.4939	23.2468
8	i-C4	58.12	0.8941	0.8658	0.8643	2.3033	2.5644	2.3140
9	n-C4	58.12	3.3799	3.3274	3.3245	5.9898	6.6865	6.0185
10	i-C5	72.15	1.7659	1.7793	1.7798	1.0984	1.2319	1.1039
11	n-C5	72.15	2.8766	2.9087	2.9100	1.2801	1.4378	1.2865
12	C6	86.16	2.7246	2.7732	2.7752	0.3104	0.3501	0.3120

13	C7	100.20	7.4612	7.6062	7.6125	0.2525	0.2858	0.2539
14	C8	114.23	6.9898	7.1291	7.1351	0.0662	0.0752	0.0666
15	C9	128.28	4.7559	4.8513	4.8555	0.0139	0.0158	0.0140
16	C10+	229.86	53.7098	54.7901	54.8374	0.0000	0.0000	0.0000
17	Benzene	78.11	0.2728	0.2778	0.2781	0.0220	0.0249	0.0221
18	Toluene	92.13	1.2883	1.3137	1.3148	0.0257	0.0291	0.0258
19	E-Benzene	106.17	0.9825	1.0021	1.0030	0.0058	0.0066	0.0058
20	Xylenes	106.17	1.6874	1.7212	1.7226	0.0084	0.0096	0.0085
21	n-C6	86.18	2.4672	2.5126	2.5145	0.2120	0.2394	0.2131
22	224Trimethylp	114.24	2.7122	2.7653	2.7676	0.0724	0.0819	0.0728
	MW		164.15	166.79	166.79	32.87	34.38	32.93
	Stream Mole Ratio		1.0000	0.9803	0.9794	0.0197	0.0008	0.0206
	Heating Value	[BTU/SCF]				1884.96	1976.71	1888.73
	Gas Gravity	[Gas/Air]				1.13	1.19	1.14
	Bubble Pt. @ 100F	[psia]	52.08	24.47	23.45			
	RVP @ 100F	[psia]	116.55	84.03	82.33			
	Spec. Gravity @ 100F		0.722	0.724	0.724			

Appendix C

Engine Specification Sheets

Engine Form

THIS INFORMATION IS REQUIRED FOR ALL ENGINES LOCATED TO EOG SITES. THIS FORM MUST BE COMPLETED PRIOR TO SITING THE ENGINE

GENERAL INFORMATION

UNIT OWNER: Casper Electric

Facility Name: Riverview 4 : 100-3031H

ENGINE DATA

Manufacturer: John Deere

Model: _____

No. of Cylinders: 6

Compression Ratio: _____

Serial Number: PE6068LD36186

Date Ordered: _____

Date Manufactured: 2008

Type of Engine:

4 Stroke Cycle: X 2 Stroke Cycle: ____

Fuel Data:

____ Other: ____

Engine Fuel Consumption (BTU/bhp-hr): ____

Fuel Gas Heating Value (BTU/scf) ____

	Nameplate	Site Rating	Operating Range
Horsepower:	_____	220	_____
Speed (rpm):	_____	_____	_____

Exhaust Stack **Height (m):** _____ **Diameter (m):** ____ **Temp. (K):** _____ **Velocity(m/s):** ____

EMISSIONS DATA

NO_X		CO		VOC		HCHO	
g/hp-hr	lb/hr	g/hp-hr	lb/hr	g/hp-hr	lb/hr	g/hp-hr	lb/hr
4		.8				—	

Annual Operating Hours: _____

EMISSION CONTROL EQUIPMENT

Lean Burn: ___ **NSCR Catalyst:** ____ **AFR controller:** ____ **SCR Catalyst:** ___

Oxidation Catalyst: ___ **Other:** X **Describe:** Cert Tier 3

Best Available Control Technology control cost analysis attached: **yes** ____ **no** ___

SUPREME COMMANDER DAVE LONG....

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF TRANSPORTATION AND AIR QUALITY
WASHINGTON, DC 20460

CERTIFICATE OF CONFORMITY
2008 MODEL YEAR

Manufacturer:	**JOHN DEERE POWER SYSTEMS**
Engine Family:	**8JDXL06.8101**
Certificate Number:	**JDX-NRCI-08-08**
Intended Service Class:	**NR5 (75-130) NR6 (130-225) NR7 (225-450)**
Fuel Type:	**DIESEL**
FELs: g/kW-hr	NMHC+NOx: **N/A** NOx: **N/A** PM: **N/A**
Effective Date:	**12/10/2007**
Date Issued:	**12/10/2007**

Karl J. Simon, Director
Compliance and Innovative Strategies Division
Office of Transportation and Air Quality

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547) and 40 CFR Part 89, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following nonroad engines, by engine family, more fully described in the documentation required by 40 CFR 89 and produced in the stated model year.

This certificate of conformity covers only those nonroad compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 89 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 89.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 89.129-96 and 89.506-96 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to a revocation or suspension of this certificate for reasons specified in 40 CFR Part 89. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void ab initio for other reasons specified in 40 CFR Part 89.

This certificate does not cover nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

California Environmental Protection Agency AIR RESOURCES BOARD	John Deere Power Systems	EXECUTIVE ORDER U-R-004-0311 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2008	8JDXL06.8101	4.5, 6.8	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Electronic Control Module, Smoke Puff Limiter, Exhaust Gas Recirculation	Loader, Tractor, Pump, Compressor, Generator Set, Other Industrial Equipment

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
75 ≤ kW < 130	Tier 3	STD	N/A	N/A	4.0	5.0	0.30	20	15	50
130 ≤ kW < 225	Tier 3	STD	N/A	N/A	4.0	3.5	0.20	20	15	50
225 ≤ kW < 450	Tier 3	STD	N/A	N/A	4.0	3.5	0.20	20	15	50
		CERT	--	--	3.4	0.6	0.11	8	1	14

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 14th day of December 2007.

Annette Hebert, Chief
Mobile Source Operations Division

Appendix D

Gas and Condensate Analyses

PRECISION ANALYSIS GAS MEASUREMENT EMISSIONS TESTING LABORATORY
307 856 0866
www.precision-labs.com

EXTENDED HYDROCARBON LIQUID STUDY
CERTIFICATE OF ANALYSIS

Company:	**EOG Resources**	Sample Name:	**Stateline 14-3427H**
Date Sampled:	03/24/2013	Sample Number:	13032705-03
Sample Location:	North Dakota	Date Tested:	04/04/2013
Sample Pressure:	41 PSI	Test Method:	GPA 2186M
Sample Temperature:	155 DEG F		
County:	Roosevelt	Date Reported:	4/4/2013
		Note: Due to the nature of H2S, the values of	
Sampling Method:	GPA-2174	H2S reported may be lower than actual.	
Type Sample:	SPOT		

Components	Mole %	Weight %	Liq. Vol. %
Hydrogen Sulfide	0.0000	0.000	0.000
Oxygen	0.0000	0.000	0.000
Carbon Dioxide	0.0000	0.000	0.000
Nitrogen	0.0337	0.006	0.006
Methane	0.6132	0.062	0.157
Ethane	1.4463	0.272	0.585
Propane	2.9381	0.810	1.224
iso-Butane	0.7308	0.266	0.362
n-Butane	2.9616	1.076	1.412
iso-Pentane	1.6201	0.731	0.896
n-Pentane	2.8446	1.283	1.560
Hexanes	2.5359	1.366	1.577
Heptanes	7.3323	4.594	5.116
Octanes	7.1878	5.134	5.569
Nonanes	5.3350	4.278	4.541
Decanes+	55.0673	74.231	71.054
Benzene	0.2462	0.120	0.104
Toluene	1.3134	0.757	0.665
Ethylbenzene	1.0577	0.702	0.617
Xylenes	1.7956	1.192	1.055
n-Hexane	2.3336	1.257	1.451
2,2,4-Trimethylpentane	2.6070	1.862	2.049
Totals	100.000	100.000	100.000

ADDITIONAL BTEX DATA

Components	Mole %	Weight %	Liq. Vol. %
2-Methylpentane	1.813	0.977	1.128
3-Methylpentane	0.723	0.389	0.449
n-Hexane	2.334	1.257	1.451
2,2,4-Trimethylpentane	2.607	1.862	2.049
Benzene	0.246	0.120	0.104
Toluene	1.313	0.757	0.665
Ethylbenzene	1.058	0.702	0.617
m-Xylene	0.206	0.137	0.121
p-Xylene	1.284	0.852	0.754
o-Xylene	0.305	0.203	0.179

API GRAVITY AT 60/60 F, calculated	**53.1**
SPECIFIC GRAVITY AT 60/60 F, calculated	**0.76649**
RELATIVE SPECIFIC GRAVITY OF DECANES+ (C10+) FRACTION, calculated	**0.80076**
AVERAGE MOLECULAR WEIGHT	**159.928**
AVERAGE MOLECULAR WEIGHT OF DECANES+ (C10+) FRACTION, calculated	**215.584**
TRUE VAPOR PRESSURE AT 100 F, PSIA, calculated	**51.123**
AVERAGE BOILING POINT, F, calculated	**358.770**
CUBIC FEET OF GAS / GALLON OF LIQUID, as Ideal Gas, calculated	**18.419**
BTU / GALLON OF LIQUID AT 14.73 PSIA, calculated	**124,035.15**
LBS / GALLON OF LIQUID, calculated	**6.390**

NOTATION: ALL CALCULATIONS PERFORMED USING PHYSICAL CONSTANTS FROM GPA 2145-09, THE TABLES OF PHYSICAL CONSTANTS FOR HYDROCARBONS AND OTHER COMPOUNDS OF INTEREST TO THE NATURAL GAS INDUSTRY.

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EXTENDED HYDROCARBON LIQUID STUDY
CERTIFICATE OF ANALYSIS

Company:	**EOG Resources**	Sample Name:	**Highline 02-0904H**
Date Sampled:	03/24/2013	Sample Number:	13032705-01
Sample Location:	North Dakota	Date Tested:	04/04/2013
Sample Pressure:	53 PSI	Test Method:	GPA 2186M
Sample Temperature:	135 DEG F		
County:	Roosevelt	Date Reported:	4/4/2013
		Note: Due to the nature of H2S, the values of	
Sampling Method:	GPA-2174	H2S reported may be lower than actual.	
Type Sample:	SPOT		

Components	Mole %	Weight %	Liq. Vol. %
Hydrogen Sulfide	0.0000	0.000	0.000
Oxygen	0.0000	0.000	0.000
Carbon Dioxide	0.0227	0.006	0.006
Nitrogen	0.0234	0.004	0.004
Methane	0.9629	0.091	0.241
Ethane	2.0079	0.356	0.794
Propane	4.0152	1.045	1.636
iso-Butane	1.0574	0.363	0.512
n-Butane	3.7981	1.303	1.771
iso-Pentane	1.9117	0.814	1.034
n-Pentane	2.9086	1.239	1.559
Hexanes	2.9133	1.482	1.771
Heptanes	7.5901	4.490	5.178
Octanes	6.7917	4.580	5.145
Nonanes	4.1767	3.162	3.475
Decanes+	52.3534	75.457	70.956
Benzene	0.2993	0.138	0.124
Toluene	1.2632	0.687	0.625
Ethylbenzene	0.9072	0.569	0.517
Xylenes	1.5792	0.990	0.907
n-Hexane	2.6008	1.323	1.581
2,2,4-Trimethylpentane	2.8174	1.900	2.164
Totals	100.000	100.000	100.000

ADDITIONAL BTEX DATA

Components	Mole %	Weight %	Liq. Vol. %
2-Methylpentane	2.083	1.060	1.267
3-Methylpentane	0.830	0.422	0.505
n-Hexane	2.601	1.323	1.581
2,2,4-Trimethylpentane	2.817	1.900	2.164
Benzene	0.299	0.138	0.124
Toluene	1.263	0.687	0.625
Ethylbenzene	0.907	0.569	0.517
m-Xylene	0.182	0.114	0.104
p-Xylene	1.129	0.708	0.649
o-Xylene	0.268	0.168	0.154

API GRAVITY AT 60/60 F, calculated	**46.8**
SPECIFIC GRAVITY AT 60/60 F, calculated	**0.79367**
RELATIVE SPECIFIC GRAVITY OF DECANES+ (C10+) FRACTION, calculated	**0.84402**
AVERAGE MOLECULAR WEIGHT	**169.389**
AVERAGE MOLECULAR WEIGHT OF DECANES+ (C10+) FRACTION, calculated	**244.140**
TRUE VAPOR PRESSURE AT 100 F, PSIA, calculated	**75.902**
AVERAGE BOILING POINT, F, calculated	**371.761**
CUBIC FEET OF GAS / GALLON OF LIQUID, as Ideal Gas, calculated	**18.653**
BTU / GALLON OF LIQUID AT 14.73 PSIA, calculated	**123,474.89**
LBS / GALLON OF LIQUID, calculated	**6.617**

NOTATION: ALL CALCULATIONS PERFORMED USING PHYSICAL CONSTANTS FROM GPA 2145-09, THE TABLES OF PHYSICAL CONSTANTS FOR HYDROCARBONS AND OTHER COMPOUNDS OF INTEREST TO THE NATURAL GAS INDUSTRY.

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Questar Energy Services
Applied Technology Services

API Gravity
Reid Vapor Pressure

Producer:	**EOG**
Well Name:	**Mandaree 5-16H Tk. 3928**
Field:	**Squaw Creek**
Tank Temp.	**0*F**
County and State:	**McKenzie, ND**
Corrected API Gravity:	**45.5 @ 60*F**
RVP:	**17.8 #**
Date Sampled:	**1/23/2012**
Date Analyzed:	**2/1/2012**
Sampled By:	**McMillan**
Analyzed By:	**Putnam**

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Questar Energy Services
Applied Technology Services

API Gravity
Reid Vapor Pressure

Producer:	**EOG**
Well Name:	**Clarks Creek 3-8 Tk. 4369**
Field:	**Antelope**
Tank Temp.	**22*F**
County and State:	**McKenzie, ND**
Corrected API Gravity:	**44.8 @ 60*F**
RVP:	**12.2 #**
Date Sampled:	**1/23/2012**
Date Analyzed:	**2/1/2012**
Sampled By:	**McMillan**
Analyzed By:	**Putnam**

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Questar Energy Services
Applied Technology Services

API Gravity
Reid Vapor Pressure

Producer:	**EOG**
Well Name:	**Bear Den 4-20H Tk. 4157**
Field:	**Spotted Horn**
Tank Temp.	**20*F**
County and State:	**McKinzie, ND**
Corrected API Gravity:	**44.1 @60*F**
RVP:	**13.0 #**
Date Sampled:	**1/21/2012**
Date Analyzed:	**2/1/2012**
Sampled By:	**McMillan**
Analyzed By:	**Putnam**

PRECISION ANALYSIS

GAS MEASUREMENT EMISSIONS TESTING LABORATORY

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Client:	EOG Resources	**Analysis Date:**	3/21/2013
Sample ID:	Riverview 100-3031H	**Date Sampled:**	3/20/2013
Unique #:	0	**Purpose:**	0
Sample Temperature:	103.6 F DEG F	**Sample Pressure:**	51.6 psia
Sampled By:	S. Fairfield	**Type Sample:**	Cylinder
County:	McKenzie		

Components	Mole %	Weight %	Liq. Vol. %
Carbon Dioxide.....	0.6740	1.1308	0.5395
Hydrogen Sulfide.....	0.0004	0.0005	0.0002
Nitrogen.....	1.8939	2.0225	0.9772
Methane.....	58.5331	35.7963	46.5386
Ethane.....	20.8338	23.8809	26.1308
Propane.....	10.4849	17.6248	13.5473
iso-Butane.....	1.1357	2.5163	1.7429
n-Butane.....	3.3813	7.4918	4.9994
iso-Pentane.....	0.6200	1.7052	1.0634
n-Pentane.....	0.9311	2.5608	1.5829
Cyclopentane.....	0.0550	0.1470	0.0764
n-Hexane.....	0.2792	0.9173	0.5385
Cyclohexane.....	0.1463	0.4695	0.2335
Other Hexanes	0.2880	0.9463	0.5555
Heptanes.....	0.3348	1.2789	0.7244
Methylcyclohexane.....	0.1101	0.4120	0.2074
2,2,4-Trimethylpentane...	0.0000	0.0000	0.0000
Benzene.....	0.0998	0.2973	0.1309
Toluene.....	0.0698	0.2451	0.1095
Ethylbenzene.....	0.0014	0.0058	0.0026
Xylenes.....	0.0117	0.0475	0.0213
C8+ Heavies.....	0.1156	0.5034	0.2777
Totals	100.0000	100.0000	100.0000

ADDITIONAL BETX DATA

Components	Mole %	Weight %	Liq. Vol. %
Cyclopentane	0.0550	0.1470	0.0764
Cyclohexane	0.1463	0.4695	0.2335
2-Methylpentane	0.1813	0.5956	0.3496
3-Methylpentane	0.1068	0.3507	0.2059
n-Hexane	0.2792	0.9173	0.5385
Methylcyclohexane	0.1101	0.4120	0.2074
2,2,4-Trimethylpentane	0.0000	0.0000	0.0000
Benzene	0.0998	0.2973	0.1309
Toluene	0.0698	0.2451	0.1095
Ethylbenzene	0.0014	0.0058	0.0026
m-Xylene	0.0019	0.0075	0.0034
p-Xylene	0.0079	0.0322	0.0144
o-Xylene	0.0019	0.0078	0.0035

SPECIFIC GRAVITY @ 60/60 F, calculated	0.9057
TOTAL GPM (Ethane Inclusive)	11.046
CALCULATED BTU / REAL CF @ 14.73 PSIA, dry basis	1517.654
CALCULATED BTU / REAL CF @ 14.73 PSIA, wet basis	1491.975
AVERAGE MOLECULAR WEIGHT	26.232
MOLAR MASS RATIO	0.9057
RELATIVE DENSITY (G x Z (Air) / Z), calculated	0.9111
IDEAL GROSS HEATING VALUE, BTU / IDEAL CF @ 14.696 PSIA	1505.271
COMPRESSIBILITY FACTOR (Z)	0.99412

PROPANE GPM	2.8812
BUTANE GPM	1.4339
GASOLINE GPM (PENTANE AND HEAVIER)	1.1739

TOTAL ACID GAS MOLE %	0.6744
H2S MOLE %	0.0004
H2S PPM	4

VOC WEIGHT FRACTION	0.3717

NOTATION: ALL CALCULATIONS PERFORMED USING PHYSICAL CONSTANTS FROM GPA 2145-09, THE TABLES OF PHYSICAL CONSTANTS FOR HYDROCARBONS AND OTHER COMPOUNDS OF INTEREST TO THE NATURAL GAS INDUSTRY.

PRECISION ANALYSIS GAS MEASUREMENT EMISSIONS TESTING LABORATORY

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Client:	EOG Resources	**Analysis Date:**	3/21/2013
Sample ID:	Riverview 4-3031H	**Date Sampled:**	3/20/2013
Unique #:	0	**Purpose:**	0
Sample Temperature:	111.7 F DEG F	**Sample Pressure:**	53.2 psia
Sampled By:	S. Fairfield	**Type Sample:**	Cylinder
County:	McKenzie		

Components	Mole %	Weight %	Liq. Vol. %
Carbon Dioxide.....	0.6818	1.1943	0.5589
Hydrogen Sulfide.....	0.0004	0.0005	0.0003
Nitrogen.....	2.2480	2.5067	1.1880
Methane.....	62.2325	39.7393	50.6800
Ethane.....	19.3354	23.1421	24.8396
Propane.....	8.9036	15.6276	11.7832
iso-Butane.....	0.9658	2.2344	1.5182
n-Butane.....	2.8759	6.6535	4.3554
iso-Pentane.....	0.5559	1.5965	0.9766
n-Pentane.....	0.8550	2.4553	1.4887
Cyclopentane.....	0.0537	0.1499	0.0764
n-Hexane.....	0.2760	0.9467	0.5452
Cyclohexane.....	0.1319	0.4420	0.2156
Other Hexanes	0.2814	0.9653	0.5559
Heptanes.....	0.2923	1.1658	0.6478
Methylcyclohexane.....	0.0863	0.3371	0.1665
2,2,4-Trimethylpentane...	0.0000	0.0000	0.0000
Benzene.....	0.0910	0.2831	0.1223
Toluene.....	0.0486	0.1783	0.0782
Ethylbenzene.....	0.0008	0.0035	0.0015
Xylenes.....	0.0066	0.0279	0.0123
C8+ Heavies.....	0.0770	0.3501	0.1895
Totals	100.0000	100.0000	100.0000

ADDITIONAL BETX DATA

Components	Mole %	Weight %	Liq. Vol. %
Cyclopentane	0.0537	0.1499	0.0764
Cyclohexane	0.1319	0.4420	0.2156
2-Methylpentane	0.1771	0.6075	0.3499
3-Methylpentane	0.1043	0.3577	0.2060
n-Hexane	0.2760	0.9467	0.5452
Methylcyclohexane	0.0863	0.3371	0.1665
2,2,4-Trimethylpentane	0.0000	0.0000	0.0000
Benzene	0.0910	0.2831	0.1223
Toluene	0.0486	0.1783	0.0782
Ethylbenzene	0.0008	0.0035	0.0015
m-Xylene	0.0010	0.0044	0.0020
p-Xylene	0.0045	0.0189	0.0083
o-Xylene	0.0011	0.0046	0.0020

SPECIFIC GRAVITY @ 60/60 F, calculated	0.8674
TOTAL GPM (Ethane Inclusive)	9.877
CALCULATED BTU / REAL CF @ 14.73 PSIA, dry basis	1451.191
CALCULATED BTU / REAL CF @ 14.73 PSIA, wet basis	1426.675
AVERAGE MOLECULAR WEIGHT	25.123
MOLAR MASS RATIO	0.8674
RELATIVE DENSITY (G x Z (Air) / Z), calculated	0.8720
IDEAL GROSS HEATING VALUE, BTU / IDEAL CF @ 14.696 PSIA	1440.199
COMPRESSIBILITY FACTOR (Z)	0.99471

PROPANE GPM	2.4467
BUTANE GPM	1.2196
GASOLINE GPM (PENTANE AND HEAVIER)	1.0532

TOTAL ACID GAS MOLE %	0.6822
H2S MOLE %	0.0004
H2S PPM	4

VOC WEIGHT FRACTION	0.3342

NOTATION: ALL CALCULATIONS PERFORMED USING PHYSICAL CONSTANTS FROM GPA 2145-09, THE TABLES OF PHYSICAL CONSTANTS FOR HYDROCARBONS AND OTHER COMPOUNDS OF INTEREST TO THE NATURAL GAS INDUSTRY.

Appendix E

Well Production Data

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
6/22/2013	554	620	103	0
6/21/2013	447	633	83	0
6/20/2013	541	640	122	0
6/19/2013	451	650	102	0
6/18/2013	498	656	93	0
6/17/2013	507	658	102	0
6/16/2013	509	645	120	0
6/15/2013	508	672	103	0
6/14/2013	508	648	112	0
6/13/2013	425	520	93	0
6/12/2013	452	527	98	0
6/11/2013	436	561	100	0
6/10/2013	432	511	98	0
6/9/2013	440	533	72	0
6/8/2013	459	543	110	0
6/7/2013	458	544	133	0
6/6/2013	457	233	108	0
6/5/2013	464	567	90	0
6/4/2013	471	570	98	0
6/3/2013	471	557	118	0
6/2/2013	443	567	98	0
6/1/2013	495	572	107	0
5/31/2013	490	573	95	0
5/30/2013	459	585	108	0
5/29/2013	481	603	80	0
5/28/2013	468	612	100	0
5/27/2013	497	602	108	0
5/26/2013	453	612	108	0
5/25/2013	520	612	113	0
5/24/2013	492	636	104	0
5/23/2013	551	712	100	0
5/22/2013	354	683	135	0
5/21/2013	544	563	75	0
5/20/2013	99	612	36	0
5/19/2013	502	628	85	0
5/18/2013	469	642	80	0
5/17/2013	489	662	115	0
5/16/2013	501	684	120	0
5/15/2013	598	661	122	0
5/14/2013	352	530	102	0
5/13/2013	382	547	70	0
5/12/2013	431	550	93	0
5/11/2013	435	563	97	0

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
5/10/2013	402	544	126	0
5/9/2013	419	562	48	0
5/8/2013	451	550	80	0
5/7/2013	406	548	88	0
5/6/2013	509	577	118	0
5/5/2013	371	589	92	0
5/4/2013	438	607	137	0
5/3/2013	445	601	78	0
5/2/2013	401	516	72	0
5/1/2013	392	400	80	0
4/30/2013	169	208	80	0
4/29/2013	238	534	56	0
4/28/2013	692	949	110	0
4/27/2013	661	725	138	0
4/26/2013	378	547	115	0
4/25/2013	396	534	62	0
4/24/2013	347	622	100	0
4/23/2013	685	963	133	0
4/22/2013	686	981	248	0
4/21/2013	709	1,019	123	0
4/20/2013	739	1,003	121	0
4/19/2013	624	649	110	0
4/18/2013	333	690	87	0
4/17/2013	613	639	125	0
4/16/2013	346	603	83	0
4/15/2013	468	834	147	0
4/14/2013	591	903	100	0
4/13/2013	609	915	123	0
4/12/2013	536	657	160	0
4/11/2013	348	515	172	0
4/10/2013	345	535	160	0
4/9/2013	439	758	130	0
4/8/2013	779	1,082	150	0
4/7/2013	784	1,107	214	0
4/6/2013	674	1,137	172	0
4/5/2013	850	1,177	193	0
4/4/2013	751	1,004	175	0
4/3/2013	837	724	120	0
4/2/2013	167	36	203	0
4/1/2013	0	15	0	0
3/31/2013	0	0	0	0
3/30/2013	0	0	0	0
3/29/2013	0	0	0	0

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
3/28/2013	0	0	0	0
3/27/2013	0	0	0	0
3/26/2013	15	1	32	0
3/25/2013	227	419	12	0
3/24/2013	672	1,085	180	0
3/23/2013	676	1,096	220	0
3/22/2013	720	1,089	120	0
3/21/2013	750	1,064	202	0
3/20/2013	662	899	230	0
3/19/2013	531	875	188	0
3/18/2013	740	1,097	178	0
3/17/2013	610	872	160	0
3/16/2013	621	1,101	180	0
3/15/2013	765	1,119	194	0
3/14/2013	760	1,138	187	0
3/13/2013	1,055	844	235	0
3/12/2013	295	1,129	280	0
3/11/2013	740	1,133	180	0
3/10/2013	650	1,168	221	0
3/9/2013	809	1,058	263	0
3/8/2013	600	799	100	0
3/7/2013	566	803	178	0
3/6/2013	682	860	320	0
3/5/2013	502	664	245	0
3/4/2013	303	531	176	0
3/3/2013	318	494	190	0
3/2/2013	384	743	247	0
3/1/2013	589	684	403	0
2/28/2013	313	287	630	0
2/27/2013	0	0	0	0
2/26/2013	0	0	0	0
2/25/2013	0	0	0	0
2/24/2013	0	0	0	0
2/23/2013	0	0	0	0
2/22/2013	0	0	0	0
2/21/2013	0	0	0	0
2/20/2013	0	0	0	0
2/19/2013	0	0	0	0
2/18/2013	0	0	0	0
2/17/2013	0	0	0	0
2/16/2013	311	351	40	0
2/15/2013	534	395	61	0
2/14/2013	585	348	71	0

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
2/13/2013	372	196	66	0
2/12/2013	181	82	18	0
2/11/2013	137	75	61	0
2/10/2013	40	89	21	0
2/9/2013	261	128	47	0
2/8/2013	161	171	71	0
2/7/2013	254	160	24	0
2/6/2013	206	83	210	0
2/5/2013	0	0	0	0
2/4/2013	0	0	0	0
2/3/2013	0	0	0	0
2/2/2013	0	66	0	0
2/1/2013	74	14	15	0
1/31/2013	5	0	0	0
1/30/2013	34	0	10	0
1/29/2013	0	0	0	0
1/28/2013	0	0	0	0
1/27/2013	0	0	0	0
1/26/2013	0	0	0	0
1/25/2013	0	0	0	0
1/24/2013	0	0	0	0
1/23/2013	0	0	0	0
1/22/2013	0	0	0	0
1/21/2013	1	283	0	0
1/20/2013	783	627	236	0
1/19/2013	816	625	166	0
1/18/2013	767	626	143	0
1/17/2013	767	564	152	0
1/16/2013	544	258	136	0
1/15/2013	433	580	80	0
1/14/2013	789	621	176	0
1/13/2013	780	614	150	0
1/12/2013	669	472	163	0
1/11/2013	853	670	150	0
1/10/2013	788	703	174	0
1/9/2013	842	713	177	0
1/8/2013	799	653	213	0
1/7/2013	796	565	164	0
1/6/2013	624	637	173	0
1/5/2013	806	676	170	0
1/4/2013	783	688	160	0
1/3/2013	914	687	185	0
1/2/2013	899	691	200	0

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
1/1/2013	891	701	165	0
12/31/2012	846	711	189	0
12/30/2012	896	717	165	0
12/29/2012	894	720	180	0
12/28/2012	878	720	190	0
12/27/2012	873	724	183	0
12/26/2012	842	706	282	0
12/25/2012	788	677	150	0
12/24/2012	888	755	207	0
12/23/2012	1,016	748	200	0
12/22/2012	925	686	194	0
12/21/2012	804	692	225	0
12/20/2012	929	698	200	0
12/19/2012	903	702	200	0
12/18/2012	837	716	172	0
12/17/2012	876	724	175	0
12/16/2012	938	707	200	0
12/15/2012	647	720	150	0
12/14/2012	716	736	190	0
12/13/2012	961	731	180	0
12/12/2012	929	737	210	0
12/11/2012	1,021	696	202	0
12/10/2012	881	696	201	0
12/9/2012	959	706	192	0
12/8/2012	814	712	178	0
12/7/2012	1,146	706	252	0
12/6/2012	949	717	210	0
12/5/2012	901	723	204	0
12/4/2012	1,070	698	240	0
12/3/2012	907	758	213	0
12/2/2012	1,007	765	220	0
12/1/2012	1,096	753	280	0
11/30/2012	1,088	743	200	0
11/29/2012	1,034	622	243	0
11/28/2012	1,091	765	255	0
11/27/2012	881	786	200	0
11/26/2012	1,002	733	230	0
11/25/2012	851	676	200	0
11/24/2012	1,053	691	240	0
11/23/2012	915	684	200	0
11/22/2012	814	647	215	0
11/21/2012	894	662	225	0
11/20/2012	1,313	649	220	0

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
11/19/2012	624	647	260	0
11/18/2012	1,006	672	225	0
11/17/2012	1,002	702	240	0
11/16/2012	1,058	733	247	0
11/15/2012	1,185	715	245	0
11/14/2012	891	369	264	0
11/13/2012	194	118	40	0
11/12/2012	204	119	50	0
11/11/2012	202	119	60	0
11/10/2012	235	124	45	0
11/9/2012	306	390	50	0
11/8/2012	944	335	160	0
11/7/2012	623	530	115	0
11/6/2012	513	136	173	0
11/5/2012	0	0	0	0
11/4/2012	0	0	0	0
11/3/2012	0	0	0	0
11/2/2012	0	0	0	0
11/1/2012	0	0	0	0
10/31/2012	0	0	0	0
10/30/2012	0	0	0	0
10/29/2012	0	0	0	0
10/28/2012	62	0	0	0
10/27/2012	885	0	23	0
10/26/2012	0	0	0	0
10/25/2012	0	0	0	0
10/24/2012	11	0	0	0
10/23/2012	338	481	60	0
10/22/2012	818	573	150	0
10/21/2012	794	581	130	0
10/20/2012	892	597	160	0
10/19/2012	814	603	150	0
10/18/2012	916	550	190	0
10/17/2012	657	470	150	0
10/16/2012	685	460	130	0
10/15/2012	700	523	108	0
10/14/2012	664	529	125	0
10/13/2012	753	532	160	0
10/12/2012	671	531	130	0
10/11/2012	759	539	160	0
10/10/2012	707	545	120	0
10/9/2012	778	548	122	0
10/8/2012	773	555	135	0

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
10/7/2012	789	560	142	0
10/6/2012	745	556	127	0
10/5/2012	788	556	139	0
10/4/2012	715	560	123	0
10/3/2012	744	567	100	0
10/2/2012	757	569	143	0
10/1/2012	826	575	123	0
9/30/2012	789	583	140	0
9/29/2012	769	591	130	0
9/28/2012	870	602	200	0
9/27/2012	825	609	130	0
9/26/2012	508	415	75	0
9/25/2012	845	624	148	0
9/24/2012	843	640	137	0
9/23/2012	930	670	135	0
9/22/2012	608	337	163	0
9/21/2012	170	103	100	0
9/20/2012	151	56	60	0
9/19/2012	574	5	25	0
9/18/2012	386	5	55	0
9/17/2012	353	5	35	0
9/16/2012	291	3	2	0
9/15/2012	229	2	5	0
9/14/2012	324	107	58	0
9/13/2012	594	215	122	0
9/12/2012	1,066	376	179	0
9/11/2012	969	283	168	0
9/10/2012	1,038	253	181	0
9/9/2012	1,015	410	175	0
9/8/2012	972	385	122	0
9/7/2012	1,037	304	130	0
9/6/2012	877	286	147	0
9/5/2012	1,002	315	200	0
9/4/2012	909	272	184	0
9/3/2012	744	258	208	0
9/2/2012	1,196	245	260	0
9/1/2012	574	230	160	0
8/31/2012	776	306	160	0
8/30/2012	820	431	192	0
8/29/2012	865	231	215	0
8/28/2012	736	412	208	0
8/27/2012	746	637	193	0
8/26/2012	778	785	180	0

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
8/25/2012	767	682	193	0
8/24/2012	735	609	170	0
8/23/2012	743	525	207	0
8/22/2012	744	674	185	0
8/21/2012	766	685	217	0
8/20/2012	814	642	133	0
8/19/2012	795	450	278	0
8/18/2012	713	478	225	0
8/17/2012	753	455	208	0
8/16/2012	753	492	187	0
8/15/2012	781	507	265	0
8/14/2012	787	447	235	0
8/13/2012	763	450	220	0
8/12/2012	790	486	212	0
8/11/2012	793	538	253	0
8/10/2012	832	602	234	0
8/9/2012	853	664	253	0
8/8/2012	946	634	236	0
8/7/2012	887	648	237	0
8/6/2012	859	693	290	0
8/5/2012	633	653	205	0
8/4/2012	511	479	222	0
8/3/2012	505	562	150	0
8/2/2012	1,045	665	328	0
8/1/2012	1,176	670	283	0
7/31/2012	766	520	304	0
7/30/2012	1,034	270	265	0
7/29/2012	1,035	413	290	0
7/28/2012	1,000	547	302	0
7/27/2012	995	642	253	0
7/26/2012	933	630	230	0
7/25/2012	968	632	283	0
7/24/2012	896	807	203	0
7/23/2012	934	854	282	0
7/22/2012	891	854	311	0
7/21/2012	925	854	241	0
7/20/2012	947	853	298	0
7/19/2012	931	854	266	0
7/18/2012	984	730	335	0
7/17/2012	865	675	318	0
7/16/2012	955	840	338	0
7/15/2012	1,032	909	344	0
7/14/2012	757	899	342	0

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
7/13/2012	878	975	313	0
7/12/2012	1,209	887	385	0
7/11/2012	368	387	300	0
7/10/2012	478	5	151	0
7/9/2012	1,782	5	543	0
7/8/2012	1,223	5	447	0
7/7/2012	1,294	5	436	0
7/6/2012	1,135	74	257	0
7/5/2012	147	90	312	0
7/4/2012	74	5	312	0
7/3/2012	128	4	80	0
7/2/2012	127	0	0	0
7/1/2012	1,440	5	1,493	0
6/30/2012	1,408	1,749	1,003	0
6/29/2012	1,477	869	1,472	0
6/28/2012	1,357	852	1,971	0
6/27/2012	143	502	3,004	0
6/26/2012	0	0	0	0
6/25/2012	0	0	0	0
6/24/2012	0	0	0	0
Totals	**217615.00**	**184689.00**	**61165.00**	**0.00**
Averages	**597.84**	**507.39**	**168.04**	**0.00**

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
6/22/2013	528	1,770	88	0
6/21/2013	490	1,793	100	0
6/20/2013	560	1,810	102	0
6/19/2013	490	1,823	87	0
6/18/2013	529	1,837	82	0
6/17/2013	525	1,853	97	0
6/16/2013	545	1,866	107	0
6/15/2013	561	1,866	107	0
6/14/2013	572	1,745	108	0
6/13/2013	489	1,529	98	0
6/12/2013	535	1,537	103	0
6/11/2013	505	1,507	100	0
6/10/2013	527	1,518	97	0
6/9/2013	467	1,436	85	0
6/8/2013	523	1,632	108	0
6/7/2013	523	1,646	110	0
6/6/2013	543	845	108	0
6/5/2013	513	1,583	98	0
6/4/2013	563	1,581	72	0
6/3/2013	568	1,568	132	0
6/2/2013	525	1,553	108	0
6/1/2013	605	1,548	107	0
5/31/2013	589	1,510	113	0
5/30/2013	569	1,467	105	0
5/29/2013	500	1,279	102	0
5/28/2013	545	1,510	72	0
5/27/2013	581	1,434	123	0
5/26/2013	534	1,413	98	0
5/25/2013	633	1,365	126	0
5/24/2013	629	1,283	100	0
5/23/2013	650	1,173	112	0
5/22/2013	633	1,020	123	0
5/21/2013	551	1,174	110	0
5/20/2013	121	1,487	7	0
5/19/2013	609	1,497	108	0
5/18/2013	636	1,497	107	0
5/17/2013	627	1,483	108	0
5/16/2013	663	1,526	125	0
5/15/2013	802	1,346	130	0
5/14/2013	419	912	118	0
5/13/2013	523	859	82	0
5/12/2013	553	859	98	0
5/11/2013	550	836	86	0

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
5/10/2013	536	782	82	0
5/9/2013	561	882	135	0
5/8/2013	558	914	85	0
5/7/2013	587	943	107	0
5/6/2013	536	939	74	0
5/5/2013	592	929	107	0
5/4/2013	581	912	107	0
5/3/2013	534	920	80	0
5/2/2013	549	910	88	0
5/1/2013	591	875	100	0
4/30/2013	532	875	100	0
4/29/2013	624	791	90	0
4/28/2013	355	1,176	168	0
4/27/2013	853	1,808	130	0
4/26/2013	720	1,698	145	0
4/25/2013	657	1,292	125	0
4/24/2013	459	882	180	0
4/23/2013	699	1,543	118	0
4/22/2013	694	1,562	112	0
4/21/2013	717	1,540	128	0
4/20/2013	719	1,535	107	0
4/19/2013	1,017	1,784	120	0
4/18/2013	582	2,107	81	0
4/17/2013	904	1,907	150	0
4/16/2013	756	1,753	123	0
4/15/2013	960	1,039	53	0
4/14/2013	395	1,434	146	0
4/13/2013	973	1,740	182	0
4/12/2013	944	1,137	150	0
4/11/2013	441	765	90	0
4/10/2013	520	765	89	0
4/9/2013	543	748	120	0
4/8/2013	556	752	110	0
4/7/2013	557	760	98	0
4/6/2013	499	632	61	0
4/5/2013	618	800	85	0
4/4/2013	890	739	120	0
4/3/2013	965	687	170	0
4/2/2013	745	535	154	0
4/1/2013	921	663	160	0
3/31/2013	900	694	240	0
3/30/2013	963	638	80	0
3/29/2013	848	635	130	0

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
3/28/2013	960	759	210	0
3/27/2013	1,104	676	250	0
3/26/2013	1,046	627	101	0
3/25/2013	978	463	180	0
3/24/2013	188	5	5	0
3/23/2013	166	171	0	0
3/22/2013	1,017	738	140	0
3/21/2013	1,092	740	148	0
3/20/2013	1,102	1,108	128	0
3/19/2013	1,005	1,528	95	0
3/18/2013	679	757	94	0
3/17/2013	840	1,160	140	0
3/16/2013	995	1,485	124	0
3/15/2013	760	1,500	140	0
3/14/2013	957	1,059	137	0
3/13/2013	1,059	554	88	0
3/12/2013	376	909	168	0
3/11/2013	954	872	120	0
3/10/2013	929	1,002	195	0
3/9/2013	1,231	1,702	203	0
3/8/2013	1,078	1,497	200	0
3/7/2013	1,517	1,505	164	0
3/6/2013	780	929	201	0
3/5/2013	885	500	172	0
3/4/2013	658	583	142	0
3/3/2013	603	586	158	0
3/2/2013	818	441	223	0
3/1/2013	1,027	385	282	0
2/28/2013	471	231	263	0
2/27/2013	0	0	0	0
2/26/2013	0	0	0	0
2/25/2013	0	0	0	0
2/24/2013	0	0	0	0
2/23/2013	0	0	0	0
2/22/2013	0	0	0	0
2/21/2013	0	5	0	0
2/20/2013	0	0	0	0
2/19/2013	0	0	0	0
2/18/2013	0	0	0	0
2/17/2013	0	0	0	0
2/16/2013	292	578	30	0
2/15/2013	448	585	41	0
2/14/2013	487	606	49	0

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
2/13/2013	438	416	51	0
2/12/2013	266	251	29	0
2/11/2013	213	259	16	0
2/10/2013	196	263	49	0
2/9/2013	193	269	29	0
2/8/2013	126	235	21	0
2/7/2013	180	235	0	0
2/6/2013	319	129	98	0
2/5/2013	0	0	0	0
2/4/2013	0	1	0	0
2/3/2013	142	384	8	0
2/2/2013	286	381	20	0
2/1/2013	211	113	5	0
1/31/2013	23	0	0	0
1/30/2013	45	0	10	0
1/29/2013	0	0	0	0
1/28/2013	0	0	0	0
1/27/2013	0	0	0	0
1/26/2013	0	0	0	0
1/25/2013	4	0	0	0
1/24/2013	0	0	0	0
1/23/2013	0	0	0	0
1/22/2013	0	0	0	0
1/21/2013	4	581	0	0
1/20/2013	886	1,268	235	0
1/19/2013	841	1,277	119	0
1/18/2013	839	1,274	108	0
1/17/2013	819	1,135	135	0
1/16/2013	700	457	35	0
1/15/2013	392	1,201	110	0
1/14/2013	830	1,285	130	0
1/13/2013	870	1,246	123	0
1/12/2013	718	786	118	0
1/11/2013	716	1,238	88	0
1/10/2013	836	1,297	133	0
1/9/2013	854	1,285	125	0
1/8/2013	721	1,216	133	0
1/7/2013	810	931	130	0
1/6/2013	618	1,223	150	0
1/5/2013	867	1,315	125	0
1/4/2013	792	1,338	115	0
1/3/2013	911	1,328	122	0
1/2/2013	999	1,350	124	0

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
1/1/2013	947	1,356	122	0
12/31/2012	894	1,368	140	0
12/30/2012	941	1,364	122	0
12/29/2012	910	1,361	132	0
12/28/2012	911	1,366	124	0
12/27/2012	937	1,354	133	0
12/26/2012	885	1,253	138	0
12/25/2012	788	1,205	110	0
12/24/2012	846	1,310	100	0
12/23/2012	1,004	1,310	148	0
12/22/2012	903	1,254	138	0
12/21/2012	826	1,272	128	0
12/20/2012	878	1,265	125	0
12/19/2012	928	1,240	142	0
12/18/2012	846	1,263	111	0
12/17/2012	878	1,275	135	0
12/16/2012	936	1,277	136	0
12/15/2012	631	1,296	90	0
12/14/2012	696	1,315	120	0
12/13/2012	763	1,313	140	0
12/12/2012	1,170	1,338	140	0
12/11/2012	970	956	122	0
12/10/2012	903	706	134	0
12/9/2012	930	717	122	0
12/8/2012	809	718	106	0
12/7/2012	1,133	685	223	0
12/6/2012	930	638	128	0
12/5/2012	894	704	140	0
12/4/2012	1,059	680	170	0
12/3/2012	891	636	166	0
12/2/2012	716	426	150	0
12/1/2012	537	319	94	0
11/30/2012	720	392	80	0
11/29/2012	935	517	173	0
11/28/2012	1,085	777	152	0
11/27/2012	874	784	110	0
11/26/2012	961	735	158	0
11/25/2012	852	686	160	0
11/24/2012	1,003	694	150	0
11/23/2012	896	722	120	0
11/22/2012	868	718	144	0
11/21/2012	952	734	154	0
11/20/2012	929	664	150	0

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
11/19/2012	1,029	749	160	0
11/18/2012	1,075	772	170	0
11/17/2012	1,210	791	165	0
11/16/2012	981	808	178	0
11/15/2012	1,091	661	208	0
11/14/2012	774	311	199	0
11/13/2012	178	105	14	0
11/12/2012	249	125	30	0
11/11/2012	207	143	23	0
11/10/2012	242	164	30	0
11/9/2012	367	388	124	0
11/8/2012	834	322	140	0
11/7/2012	523	588	110	0
11/6/2012	827	273	215	0
11/5/2012	0	0	0	0
11/4/2012	3	0	0	0
11/3/2012	7	0	0	0
11/2/2012	3	0	0	0
11/1/2012	446	406	50	0
10/31/2012	862	655	160	0
10/30/2012	715	703	180	0
10/29/2012	990	717	238	0
10/28/2012	763	758	140	0
10/27/2012	498	226	59	0
10/26/2012	23	78	0	0
10/25/2012	325	502	48	0
10/24/2012	345	698	37	0
10/23/2012	957	701	172	0
10/22/2012	958	713	167	0
10/21/2012	950	732	149	0
10/20/2012	1,070	458	195	0
10/19/2012	446	616	160	0
10/18/2012	1,103	672	205	0
10/17/2012	724	518	140	0
10/16/2012	798	492	117	0
10/15/2012	652	556	147	0
10/14/2012	712	561	160	0
10/13/2012	803	566	150	0
10/12/2012	732	569	128	0
10/11/2012	819	577	130	0
10/10/2012	753	583	140	0
10/9/2012	840	589	150	0
10/8/2012	852	599	146	0

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
10/7/2012	852	607	150	0
10/6/2012	810	614	142	0
10/5/2012	884	627	165	0
10/4/2012	808	644	148	0
10/3/2012	834	392	280	0
10/2/2012	380	533	150	0
10/1/2012	939	668	170	0
9/30/2012	850	678	260	0
9/29/2012	1,128	691	140	0
9/28/2012	745	704	123	0
9/27/2012	940	702	185	0
9/26/2012	551	514	115	0
9/25/2012	983	718	192	0
9/24/2012	995	737	163	0
9/23/2012	1,003	758	160	0
9/22/2012	817	422	200	0
9/21/2012	408	249	140	0
9/20/2012	154	258	40	0
9/19/2012	429	340	30	0
9/18/2012	0	335	0	0
9/17/2012	0	321	0	0
9/16/2012	635	169	63	0
9/15/2012	204	22	88	0
9/14/2012	120	191	55	0
9/13/2012	229	215	108	0
9/12/2012	446	307	142	0
9/11/2012	423	302	132	0
9/10/2012	462	314	124	0
9/9/2012	422	321	192	0
9/8/2012	416	322	148	0
9/7/2012	429	315	155	0
9/6/2012	244	46	328	0
9/5/2012	0	0	0	0
9/4/2012	1,263	5	0	0
9/3/2012	1,753	5	324	0
9/2/2012	866	5	40	0
9/1/2012	180	206	30	0
8/31/2012	623	311	90	0
8/30/2012	356	312	83	0
8/29/2012	566	308	102	0
8/28/2012	450	454	78	0
8/27/2012	485	575	118	0
8/26/2012	482	567	67	0

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
8/25/2012	456	631	83	0
8/24/2012	461	619	88	0
8/23/2012	422	571	67	0
8/22/2012	423	574	60	0
8/21/2012	448	577	67	0
8/20/2012	455	545	68	0
8/19/2012	511	574	80	0
8/18/2012	573	610	116	0
8/17/2012	463	614	82	0
8/16/2012	687	494	97	0
8/15/2012	511	599	77	0
8/14/2012	539	447	90	0
8/13/2012	608	615	107	0
8/12/2012	720	635	88	0
8/11/2012	674	646	113	0
8/10/2012	676	618	95	0
8/9/2012	559	588	87	0
8/8/2012	586	591	99	0
8/7/2012	614	602	100	0
8/6/2012	624	595	100	0
8/5/2012	537	575	47	0
8/4/2012	486	479	33	0
8/3/2012	434	515	80	0
8/2/2012	570	521	115	0
8/1/2012	554	525	112	0
7/31/2012	566	550	110	0
7/30/2012	581	568	136	0
7/29/2012	608	565	108	0
7/28/2012	605	595	128	0
7/27/2012	557	555	130	0
7/26/2012	591	572	110	0
7/25/2012	623	584	167	0
7/24/2012	621	577	233	0
7/23/2012	650	644	148	0
7/22/2012	584	644	112	0
7/21/2012	628	644	188	0
7/20/2012	670	643	165	0
7/19/2012	646	644	138	0
7/18/2012	688	549	136	0
7/17/2012	720	619	173	0
7/16/2012	651	750	183	0
7/15/2012	735	816	167	0
7/14/2012	791	830	182	0

Riverview 4-3031H Production Data

Date	Oil Prod bbl/day	Gas Prod Mscf/day	Water Prod bbl/day	Gas Sales Mscf/day
7/13/2012	826	867	197	0
7/12/2012	729	929	207	0
7/11/2012	1,014	819	180	0
7/10/2012	521	754	186	0
7/9/2012	307	525	193	0
7/8/2012	278	465	122	0
7/7/2012	292	513	102	0
7/6/2012	242	489	62	0
7/5/2012	1,616	825	318	0
7/4/2012	1,834	735	367	0
7/3/2012	517	692	1,294	0
7/2/2012	840	1,635	995	0
7/1/2012	0	0	0	0
6/30/2012	0	0	0	0
6/29/2012	0	0	0	0
6/28/2012	0	0	0	0
6/27/2012	0	0	0	0
6/26/2012	0	0	0	0
6/25/2012	0	0	0	0
6/24/2012	0	0	0	0
Totals	**222708**	**275560**	**42144**	**0**
Averages	**611.835**	**757.033**	**115.78022**	**0**